

AD-A067 088 DEPUTY CHIEF OF STAFF FOR RESEARCH DEVELOPMENT AND AC--ETC F/G 5/1
JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1980 SUBMITTED TO CO--ETC(U)
JAN 79

DEPUTY CHIEF OF STAFF FOR RESEARCH DEVELOPMENT AND AC--ETC F/G 5/1
JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1980 SUBMITTED TO CO--ETC(U)
JAN 79

NL

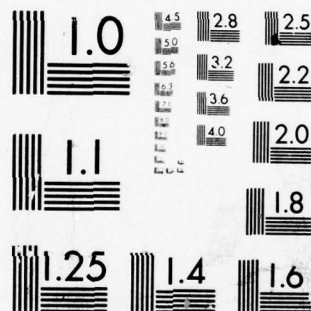
1 OF 1

AD
A067088

END
DATE
FILMED
6 --79
DDC

6 --79

004



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

DDC FILE COPY.

AD A0 67088

LEVEL
ARMY

DEPARTMENT OF THE

DDC
APR 9 1979
LEGISLATIVE

JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1980

Submitted to Congress

JANUARY 1979.



This document has been approved
for public release and sale; its
distribution is unlimited.

RESEARCH DEVELOPMENT, TEST AND EVALUATION, ARMY

12 839



408 992

12

79 04 05 018

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER N/A	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Department of the Army Justification of Estimates for Fiscal Year 1980 Submitted to Congress January 1979		5. TYPE OF REPORT & PERIOD COVERED Army RDTE Budget Justification FY 1980
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Department of the Army		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS HQDA, Office of the Deputy Chief of Staff for Research, Development, & Acquisition (DAMA-PPR-B) Washington, DC 20310		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS HQDA, Office of the Deputy Chief of Staff for Research, Development, & Acquisition (DAMA-AOA-S) Washington, DC 20310		12. REPORT DATE January 1979
		13. NUMBER OF PAGES 79
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release, distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Army Research, Development, Test, and Evaluation Budget Justification Book for justification of estimates submitted to Congress in January 1979 for Fiscal Year 1980.		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)		

DD FORM 1473

1 JAN 73

EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE	
1. REPORT NUMBER	
2. AUTHOR	
3. TITLE	
4. REPORT NUMBER	
5. AUTHOR	
6. TITLE	
7. REPORT NUMBER	
8. AUTHOR	
9. TITLE	
10. REPORT NUMBER	
11. AUTHOR	
12. TITLE	
13. REPORT NUMBER	
14. AUTHOR	
15. TITLE	
16. REPORT NUMBER	
17. AUTHOR	
18. TITLE	
19. REPORT NUMBER	
20. AUTHOR	
21. TITLE	
22. REPORT NUMBER	
23. AUTHOR	
24. TITLE	
25. REPORT NUMBER	
26. AUTHOR	
27. TITLE	
28. REPORT NUMBER	
29. AUTHOR	
30. TITLE	
31. REPORT NUMBER	
32. AUTHOR	
33. TITLE	
34. REPORT NUMBER	
35. AUTHOR	
36. TITLE	
37. REPORT NUMBER	
38. AUTHOR	
39. TITLE	
40. REPORT NUMBER	
41. AUTHOR	
42. TITLE	
43. REPORT NUMBER	
44. AUTHOR	
45. TITLE	
46. REPORT NUMBER	
47. AUTHOR	
48. TITLE	
49. REPORT NUMBER	
50. AUTHOR	
51. TITLE	
52. REPORT NUMBER	
53. AUTHOR	
54. TITLE	
55. REPORT NUMBER	
56. AUTHOR	
57. TITLE	
58. REPORT NUMBER	
59. AUTHOR	
60. TITLE	
61. REPORT NUMBER	
62. AUTHOR	
63. TITLE	
64. REPORT NUMBER	
65. AUTHOR	
66. TITLE	
67. REPORT NUMBER	
68. AUTHOR	
69. TITLE	
70. REPORT NUMBER	
71. AUTHOR	
72. TITLE	
73. REPORT NUMBER	
74. AUTHOR	
75. TITLE	
76. REPORT NUMBER	
77. AUTHOR	
78. TITLE	
79. REPORT NUMBER	
80. AUTHOR	
81. TITLE	
82. REPORT NUMBER	
83. AUTHOR	
84. TITLE	
85. REPORT NUMBER	
86. AUTHOR	
87. TITLE	
88. REPORT NUMBER	
89. AUTHOR	
90. TITLE	
91. REPORT NUMBER	
92. AUTHOR	
93. TITLE	
94. REPORT NUMBER	
95. AUTHOR	
96. TITLE	
97. REPORT NUMBER	
98. AUTHOR	
99. TITLE	
100. REPORT NUMBER	

DEPARTMENT OF THE ARMY
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY
TABLE OF CONTENTS

Page No.

Section 1: Budget Appendix Extract;

Appropriation Language	1
Program and Financing Schedules	2
Object Classification Schedule	8
Personnel Summary	8

Section 2: Program Element Listing;

Table of Contents	9
Introduction and Explanation of Contents	10
Summary by Research Categories (Program)	11
Summary by Budget Activities	11
Details by Budget Activity	
Technology Base	12
Advanced Technology Development	14
Strategic Programs	16
Tactical Programs	16
Intelligence and Communications	21
Defensewide Mission Support	22

Section 3: Performer Distribution;

Performer Distribution	24
----------------------------------	----

Section 4: Installation Analysis (In-House Installations);

Installation Analysis (In-House Installations)	25
--	----

Section 5: Analysis of Reimbursable Program;

Analysis of Reimbursable Program	49
--	----

Section 6: Federal Contract Research Centers;

Federal Contract Research Centers	52
---	----

This document has been approved
for public release and sale; its
distribution is unlimited.

79 04 05 038 1

TABLE OF CONTENTS

<u>Section 7:</u> Major Improvements to and Construction of Government-Owned Facilities Funded by RDTE, Army Appropriation, <i>and</i>	Page No. 74
<u>Section 8:</u> Project Data for Construction at Government-Owned Facilities Funded by RDTE, Army Appropriation.	79

ACCESSION for	
NTIS	<input checked="" type="checkbox"/> White Section
DOC	<input type="checkbox"/> Buff Section
UNANNOUNCED	<input type="checkbox"/>
JUSTIFICATION	
BY	
DISTRIBUTION/AVAILABILITY CODES	
Dist. Avail. and/or SPECIAL	<i>A</i>

Budget Appendix Extract

DEPARTMENT OF THE ARMY
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY
APPROPRIATION LANGUAGE

Section 1

For expenses necessary for basic and applied scientific research, development, test, and evaluation, including maintenance, rehabilitation, lease, and operation of facilities and equipment, as authorized by law; /\$2,635,864,000/ \$2,927,000,000, to remain available for obligation until September 30, /1980/ 1981. (10 U.S.C. 2353, 4503; Department of Defense Appropriation Act, 1979; additional authorizing legislation to be proposed.)

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

Army

Research, Development, Test, and Evaluation, Army

22 JAN 79

Program and Financing (in thousands of dollars)

Identification code 21-2040-0-1-051

Obligations

Budget plan (amounts for
RDT&E actions programmed)

1978 actual 1979 est. 1980 est. 1978 actual 1979 est. 1980 est.

Program by activities:

Direct:

1. Technology base
2. Advanced technology development
3. Strategic programs
4. Tactical programs
5. Intelligence and communications
6. Defensewide mission support

Total direct

Reimbursable program (total)

Total

Financing:

Offsetting collections from:

- 11.00 Federal funds
- 13.00 Trust funds
- 14.00 Non-federal sources
- 21.40 Unobligated balance available, start of year:
Reprogramming from or to prior year budget plans
- 24.40 Unobligated balance available, end of year:
For completion of prior year budget plans
- 25.00 Unobligated balance lapsing

Budget authority

Budget authority:

- 40.00 Appropriation
- 41.00 Transferred to other accounts
- 43.00 Appropriation (adjusted)

Relation of obligations to outlays:

- 71.00 Obligations incurred, net
- 72.40 Obligated balance, start of year
- 74.40 Obligated balance, end of year
- 77.00 Adjustments in expired accounts

Outlays

10.00	Total	2,836,539	3,065,864	3,362,000	2,790,273	3,051,700	3,332,700
11.00	Federal funds	-387,284	-425,600	-430,200	-377,310	-425,600	-430,200
13.00	Trust funds	-37,801	.....	.....	-37,673	.....	.....
14.00	Non-federal sources	-3,127	-4,400	-4,800	-3,374	-4,400	-4,800
21.40	Unobligated balance available, start of year: Reprogramming from or to prior year budget plans	.....	.....	.....	-192,453	-224,865	-239,029
24.40	Unobligated balance available, end of year: For completion of prior year budget plans	-4,001	.....	.....	224,805	239,029	268,329
25.00	Unobligated balance lapsing	4,001	.....	.....	4,001	.....	.....
	Budget authority	2,408,327	2,635,864	2,927,000	2,408,327	2,635,864	2,927,000
40.00	Appropriation	2,417,882	2,635,864	2,927,000	2,417,882	2,635,864	2,927,000
41.00	Transferred to other accounts	-9,555	.....	.....	-9,555	.....	.....
43.00	Appropriation (adjusted)	2,408,327	2,635,864	2,927,000	2,408,327	2,635,864	2,927,000
71.00	Obligations incurred, net	.....	.....	.....	2,371,516	2,621,700	2,897,700
72.40	Obligated balance, start of year	.....	.....	.....	846,224	872,015	1,040,715
74.40	Obligated balance, end of year	.....	.....	.....	-872,015	-1,040,715	-1,161,415
77.00	Adjustments in expired accounts	.....	.....	.....	-3,918	.....	.....
90.00	Outlays	.....	.....	.....	2,342,208	2,453,000	2,777,000

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

Army		Research, Development, Test, and Evaluation, Army		22 JAN 79	
		Program and Financing (in thousands of dollars)		1977 Fiscal year program	
		Budget plan (amounts for		Obligations	
		RD&E actions programmed)			
Identification code		21-2040-0-1-051			
		1976 actual 1979 est. 1980 est.		1978 actual 1979 est. 1980 est.	
Program by activities:					
Direct:					
1. Technology base					
2. Advanced technology development					
3. Strategic programs					
4. Tactical programs					
5. Intelligence and communications					
6. Defensewide mission support					
Total direct					
Reimbursable program (total)					
10.00	Total			23,781	
				7,591	
				1,167	
				64,781	
				4,668	
				24,396	
				126,384	
				52,213	
				178,599	
Financing:					
Offsetting collections from:					
11.00	Federal funds			9,974	
13.00	Trust funds			128	
14.00	Non-federal sources			-247	
21.40	Unobligated balance available, start of year:				
	For completion of prior year budget plans			-192,456	
	Reprogramming from or to prior year budget plans				
25.00	Unobligated balance lapsing			4,001	
	Budget authority				

Army	Research, Development, Test, and Evaluation, Army		22 JAN 79	
	Program and Financing (in thousands of dollars)		1978 Fiscal year program	
	Budget plan (amounts for		Obligations	
	RDTE actions programmed)			
Identification code	21-2040-0-1-081	1978 actual	1979 est.	1980 est.
Program by activities:				
Direct:				
1.	Technology base	392,408	370,647	21,758
2.	Advanced technology development	108,811	94,606	14,205
3.	Strategic programs	215,941	215,207	734
4.	Tactical programs	1,310,881	1,254,885	55,996
5.	Intelligence and communications	14,134	12,546	1,588
6.	Defensewide mission support	376,155	359,342	16,813
Total direct				
Reimbursable program (total)		2,418,327	2,307,233	111,094
Total		418,212	304,441	113,771
10.00	Total	2,836,539	2,611,674	224,865
Financing:				
Offsetting collections from:				
11.00	Federal funds	-387,284	-387,284	
13.00	Trust funds	-37,801	-37,801	
14.00	Non-federal sources	-3,127	-3,127	
11.40	Unobligated balance available, start of year:			
24.40	For completion of prior year budget plans			-224,865
24.40	Unobligated balance available, end of year:			
	For completion of prior year budget plans			
Budget authority				
Budget authority:		2,408,327	2,408,327	
40.00	Appropriation	2,417,892	2,417,892	
41.00	Transferred to other accounts	-9,555	-9,555	
43.00	Appropriation (adjusted)	2,408,327	2,408,327	

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

Army

Research, Development, Test, and Evaluation, Army

22 JAN 79

Program and Financing (in thousands of dollars)

1979 Fiscal year program

Identification code 21-2040-0-1-051

Obligations

Budget plan (amounts for
RD&E actions programmed)

1980 est.

1979 est.

1978 actual

Program by activities:

Direct:

1. Technology base
2. Advanced technology development
3. Strategic programs
4. Tactical programs
5. Intelligence and communications
6. Defensewide mission support

Total direct

Reimbursable program (total)

10.00 Total

Financing:

Offsetting collections from:

11.00 Federal funds

14.00 Non-federal sources

21.40 Unobligated balance available, start of year:

24.40 For completion of prior year budget plans

For completion of prior year budget plans

Budget authority

.....	426,192	.....	.....	402,442	26,750
.....	96,373	.....	.....	90,695	5,676
.....	231,074	.....	.....	217,466	13,608
.....	1,413,352	.....	.....	1,330,393	82,959
.....	16,177	.....	.....	14,412	1,765
.....	450,696	.....	.....	424,187	26,509
.....
.....	2,635,864	.....	.....	2,479,595	156,269
.....	430,000	.....	.....	347,240	82,760
.....
.....	3,065,864	.....	.....	2,826,835	239,029
.....
.....
.....	-425,600	.....	.....	-425,600	.....
.....	-4,400	.....	.....	-4,400	.....
.....	.....	.....	.....	.....	-239,029
.....
.....	.....	.....	.....	239,029	.....
.....
.....	2,635,864	.....	.....	2,635,864	.....

Program Element Listing

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

Army	Research, Development, Test, and Evaluation, Army	22 JAN 79
Program and Financing (in thousands of dollars)		1980 Fiscal year program
Identification code	21-2040-0-1-051	Obligations
Budget plan (amounts for		
RD&E actions programmed)		
1978 actual	1979 est.	1980 est.
1978 actual	1980 est.	1979 est.
Program by activities:		
Direct:		
1. Technology base	490,670	460,850
2. Advanced technology development	133,150	128,222
3. Strategic programs	230,263	216,292
4. Tactical programs	1,538,717	1,435,841
5. Intelligence and communications	29,507	26,935
6. Defensewide mission support	504,693	473,291
Total direct	2,927,000	2,741,431
Reimbursable program (total)	435,000	352,240
Total	3,362,000	3,093,671
Financing:		
Offsetting collections from:		
Federal funds	-430,200	-430,200
Non-federal sources	-4,800	-4,800
Unobligated balance available, end of year:		
For completion of prior year budget plans		268,329
Budget authority	2,927,000	2,927,000

Research, Development, Test, and Evaluation, Army (Supplemental now requested under existing legislation) For an additional amount for "Research, Development, Test, and Evaluation, Army", \$73,600,000 to remain available for obligation until September 30 1980.

Program and Financing (in thousands of dollars)

2

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

Army

Research, Development, Test, and Evaluation, Army

22 JAN 79

Object Classification (in thousands of dollars)

Identification code	21-2040-0-1-051	1978 actual	1979 est.	1980 est.
Personnel compensation:				
11.1 Permanent positions		290,672	321,393	491,960
11.3 Positions other than permanent		5,022	2,814	3,961
11.5 Other personnel compensation		5,104	6,524	7,518
Total personnel compensation		300,798	331,731	503,439
Direct obligations:				
Personnel compensation:				
12.1 Personnel benefits: civilian personnel		243,586	267,100	389,674
21.0 Travel and transportation of persons		23,478	26,726	39,145
22.0 Transportation of things		16,781	24,989	26,745
23.2 Communications, utilities and other rent		6,683	6,249	6,322
24.0 Printing and reproduction		7,133	15,536	17,752
25.0 Other services:		1,241	1,023	1,213
Purchases from industrial funds				
Contracts		550,833	557,270	500,474
26.0 Supplies and materials		1,446,176	1,567,215	1,810,956
31.0 Equipment		36,874	43,410	53,891
41.0 Grants, subsidies, and contributions		101,076	47,724	49,789
		1,734	1,447	1,733
Total direct obligations		2,431,617	2,580,689	2,917,700
Reimbursable obligations:				
Personnel compensation:				
12.1 Personnel benefits: civilian personnel		65,212	44,631	20,705
21.0 Travel and transportation of persons		7,290	4,164	2,065
22.0 Transportation of things		7,402	6,814	4,095
23.1 Standard level user charges		1,072	378	640
24.0 Printing and reproduction		2,040	3,982	4,202
25.0 Other services:		270	300	316
Contracts				
26.0 Supplies and materials		253,842	376,615	383,167
31.0 Equipment		11,290	13,677	11,766
		9,238	9,750	7,864
Total reimbursable obligations		356,636	461,011	435,000
Total obligations		2,788,253	3,041,700	3,352,700

PERSONNEL SUMMARY

TOTAL NUMBER OF PERMANENT POSITIONS
FULL-TIME EQUIVALENT OF OTHER POSITIONS
TOTAL COMPENSABLE WORK YEARS
AVERAGE GS GRADE
AVERAGE GS SALARY
AVERAGE SALARY OF UNGRADED POSITIONS

14,434
642
14,510
9.76
21,828
16,029

14,940
597
15,298
9.74
21,742
17,067

19,145
765
19,032
9.74
21,754
18,617

Section 2

DEPARTMENT OF THE ARMY
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY
PROGRAM ELEMENT LISTING
TABLE OF CONTENTS

	<u>Page No.</u>
1. Introduction and Explanation of Contents.	10
Summaries by:	
1. Research Categories (Program)	11
2. Budget Activities	11
3. FYDP Programs	11
Details by Budget Activity:	
1. Technology Base	12
2. Advanced Technology Development	14
3. Strategic Programs	16
4. Tactical Programs	16
5. Intelligence and Communications	21
6. Defensewide Mission Support	22

Section 2 (Contd)

PROGRAM ELEMENT LISTING
INTRODUCTION AND EXPLANATION OF CONTENTS

This section has been prepared for the purpose of providing summary program element budget information concerning the US Army Research, Development, Test, and Evaluation Program. The listing is preceded by three summaries: the first by Research Categories (Program), the second by Budget Activities, and the third by FYDP Programs.

A separate document, Descriptive Summaries, furnishes detail by project. In addition, it furnishes narrative information on all Research, Development, Test, and Evaluation (RDTE) program elements and projects of \$5.0 million or more. The index number in the right-hand column of this Program Element Listing refers to the appropriate page in the Descriptive Summaries. The funding information reflected in these volumes corresponds to that contained in the President's Budget except as follows:

- a. The FY 1978 Budget Activity distribution has been changed to reflect restructuring for comparability with FY 1980.
- b. The FY 1979 Program Element Listing has been increased for the proposed FY 1979 Supplemental Budget Request (as shown by the Program and Financing Schedule on page 7 of this volume).

A direct comparison of FY 1978, FY 1979, and FY 1980 data in this Program Element Listing with data submitted in the Program Element Listing dated January 1978 will reveal significant differences. Narrative explanation of these changes is included in the appropriate individual Program Element Descriptive Summary.

DEPARTMENT OF THE ARMY
FY 1980 R U T + E PROGRAM

EXHIBIT R-1

DATE: 22 JAN 1979

SUMMARY

THOUSANDS OF DOLLARS

	FY 1978	FY 1979	FY 1980	FY 1981
	-----	-----	-----	-----

SUMMARY RECAP OF RESEARCH CATEGORIES

RESEARCH	106,375	116,305	136,100	159,192
EXPLORATORY DEVELOPMENT	200,569	315,687	354,490	390,681
ADVANCED DEVELOPMENT	454,503	574,774	690,667	856,118
ENGINEERING DEVELOPMENT	1,083,982	1,177,063	1,155,911	999,018
MANAGEMENT AND SUPPORT	373,485	414,684	452,135	486,793
RESEARCH AND DEVELOPMENT (FYUP PROGRAM 6)	2,307,511	2,598,513	2,789,383	2,891,794
OPERATIONAL SYSTEMS DEVELOPMENT	110,816	116,951	137,617	101,431
TOTAL RESEARCH DEVELOPMENT TEST + EVAL, ARMY	2,418,327	2,709,464	2,927,000	2,993,225

SUMMARY RECAP OF BUDGET ACTIVITIES

TECHNOLOGY BASE	335,544	431,992	490,670	549,873
ADVANCED TECHNOLOGY DEVELOPMENT	63,407	96,373	133,153	210,740
STRATEGIC PROGRAMS	226,517	231,074	230,263	256,349
TACTICAL PROGRAMS	1,304,269	1,483,152	1,538,717	1,385,281
INTELLIGENCE AND COMMUNICATIONS	14,113	16,177	29,587	35,864
DEFENSEWIDE MISSION SUPPORT	400,477	450,696	504,693	547,098
TOTAL RESEARCH DEVELOPMENT TEST + EVAL, ARMY	2,418,327	2,709,464	2,927,000	2,993,225

SUMMARY RECAP OF FYUP PROGRAMS

GENERAL PURPOSE FORCES	32,127	91,910	107,113	65,587
INTELLIGENCE AND COMMUNICATIONS	18,689	19,841	38,587	35,864
RESEARCH AND DEVELOPMENT (FYUP PROGRAM 6)	2,307,511	2,598,513	2,789,383	2,891,794
TOTAL RESEARCH DEVELOPMENT TEST + EVAL, ARMY	2,418,327	2,709,464	2,927,000	2,993,225

THIS PAGE IS BEST QUALITY FRAGILE
FROM COPY FURNISHED TO DDG

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

DEPARTMENT OF THE ARMY
FY 1980 RDT & E PROGRAM

EXHIBIT A-1

APPROPRIATION: 2040 A RESEARCH DEVELOPMENT TEST & EVAL, ARMY

DATE: 22 JAN 1979

PROGRAM LINE ELEMENT NO NUMBER	ITEM NOMENCLATURE	ACT	THOUSANDS OF DOLLARS				DESCRIPTIVE SUMMARY PAGE NUMBER
			FY 1976	FY 1979	FY 1980	FY 1981 G	
1	41101A IN-HOUSE LAB INDEPENDENT RESEARCH	1	14,692	16,000	17,500	18,400 U	I-1
2	41102A DEFENSE RESEARCH SCIENCES	1	92,203	100,305	110,680	140,792 U	I-10
3	42105A MATERIALS	1	9,905	11,275	13,611	13,200 U	I-34
4	42111A ATMOSPHERIC INVESTIGATIONS	1	5,135	5,781	5,968	5,582 U	I-59
5	42120A FUZE, NUCLEAR WPNS EFFECTS, FLUIDICS	1	11,546	5,788	6,641	9,325 U	I-64
6	42201A AIRCRAFT WEAPONS TECHNOLOGY	1	1,177	1,910	2,101	2,311 U	I-69
7	42202A AIRCRAFT AVIONICS TECHNOLOGY	1	5,171	5,768	6,342	6,977 U	I-73
8	42209A AERONAUTICAL TECHNOLOGY	1	14,246	15,659	17,183	19,932 U	I-78
9	42210A AIRCRAFT TECHNOLOGY	1	905	1,208	1,327	1,533 U	I-83
10	42303A MISSILE TECHNOLOGY	1	23,810	28,726	29,350	32,023 U	I-86
11	42307A HIGH ENERGY LASER TECHNOLOGY	1			1,500	2,000 U	I-99
12	42601A TANK AND AUTOMOTIVE TECHNOLOGY	1	6,378	10,262	11,893	14,814 U	I-106
13	42603A LARGE CAL AND NUCLEAR TECHNOLOGY	1					I-111
14	42617A SMALL CAL AND FIRE CTRL TECHNOLOGY	1	9,915	9,448	8,598	9,609 U	I-116
15	42618A BALLISTICS TECHNOLOGY	1	17,457	18,009	16,512	28,578 U	I-120
16	42622A CHEMICAL MUNITIONS/CHEMICAL CMBT SPT	1	4,817	5,731	6,675	6,374 U	I-125
17	42701A COMMUNICATIONS ELECTRONICS	1	5,538	7,257	13,291	13,582 U	I-130
18	42707A CMBT SURV TARGET ACQ & ID	1	3,977	5,239	3,658	4,435 U	I-137
19	42708A MIL ENVIRONMENTAL CRITERIA DEV	1	3,000	3,307	3,559	4,899 U	I-142
20	42705A ELECTRICAL AND ELECTRONIC DEVICES	1	14,578	13,078	14,728	16,897 U	I-148
21	42706A CHEM BIOLOGICAL DEFENSE/GENL INVEST	1	9,656	12,186	12,543	12,679 U	I-156
22	42707A MAPPING - GEODESY	1	4,984	4,208	4,524	4,488 U	I-160
23	42709A NIGHT VISION INVESTIGATIONS	1	5,362	6,063	9,183	11,948 U	I-164

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

DEPARTMENT OF THE ARMY
FY 1980 R D T + E PROGRAM

EXHIBIT R-1

APPROPRIATIONS 2040 - RESEARCH DEVELOPMENT TEST + EVAL, ARMY

DATE: 22 JAN 1979

PROGRAM LINE ELEMENT NO	ITEM NUMERATURE	ACT	THOUSANDS OF DOLLARS				DESCRIPTIVE SUMMARY PAGE NUMBER
			FY 1978	FY 1979	FY 1980	FY 1981 C	
24	62715A TACTICAL ELECTRONIC WARFARE TECHNOLOGY	1					1-168
25	62716A HUMAN FACTORS ENGR IN SYS DEV	1	4,000	5,922	6,771	7,247	U 1-177
26	62717A HUMAN PERFORMANCE EFFECT/SIMULATION	1	3,800	3,000	3,733	4,497	U 1-180A
27	62719A MOBILITY AND WEAPONS EFFECTS TECH	1	3,055	4,915	5,150	5,269	U 1-184
28	62720A ENVIRONMENTAL QUALITY TECH	1	7,437	9,448	9,675	9,411	U 1-189
29	62722A MANPOWER, PERSONNEL AND TRAINING	1	4,001	4,786	5,910	6,594	U 1-194
30	62723A CLOTHING EQUIP AND SHELTER TECH	1	3,005	3,458	4,397	7,219	U 1-198
31	62724A JT SVC FOOD SYS TECH	1	8,044	8,000	7,453	9,334	U 1-203
32	62725A COMPUTER AND INFORMATION SCIENCE	1	2,800	2,510	2,496	2,470	U 1-207
33	62726A ARMY SUPPORT DARPA-HOMLS	1	3,030	3,000	1,500		U 1-213
34	62727A NON-SYSTEM TRAINING DEVICES	1	2,050	2,750	2,955	3,726	U 1-217
35	62730A COLJ REGIONS ENGINEERING TECHNOLOGY	1	2,910	3,072	3,677	3,676	U 1-222
36	62731A MILITARY FACILITIES ENGINEERING TECHNOLOGY	1	2,000	3,000	3,000	3,759	U 1-227
37	62732A RPV SUPPORTING TECHNOLOGY	1	1,300	1,100	2,744	2,099	U 1-232
38	62733A MOBILITY EQUIPMENT TECHNOLOGY	1	9,555	9,714	9,991	9,805	U 1-237
39	62734A MEJ DEFENSE AGAINST CMEN AGENTS	1	6,448	7,027	5,796	5,846	U 1-242
40	62770A MIL INFECT DISEASE TECHNOLOGY	1	15,128	15,154	12,212	11,854	U 1-245
41	62771A MIL PSYCHIATRY AND MICROWAVE INJURY	1	2,559	2,917	5,056	8,998	U 1-254
42	62772A RECJVEFY FROM INJURY	1	6,933	5,042	4,957	6,789	U 1-258
43	62773A HELICOPTER COMBAT CREW ABN MEDICINE	1	3,506	2,211	2,915	4,331	U 1-262
44	62774A MILITARY BURN TECHNOLOGY	1	639	717			U ---
45	62775A COMBAT MAXILLOFACIAL INJURY	1	1,048	1,260	1,258	1,269	U 1-266
46	62776A MEJ DEF AGAINST BIOLOGICAL AGENTS	1	9,256	7,564	6,923	8,214	U 1-270

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

UNCLASSIFIED

DEPARTMENT OF THE ARMY
FY 1980 R O Y + C PROGRAM

EXHIBIT R-1

APPROPRIATIONS 2040 A RESEARCH DEVELOPMENT TEST + EVAL, ARMY

DATE: 22 JAN 1979

PROGRAM LINE ELEMENT NO NUMBER	ITEM NOMENCLATURE	ACT	THOUSANDS OF DOLLARS				S E C	DESCRIPTIVE SUMMARY PAGE NUMBER
			FY 1970	FY 1979	FY 1980	FY 1981		
47	62777A MILITARY ENVIRONMENTAL STRESS	1	2,147	3,000	6,590	11,249	U	1-276
48	62778A COMBAT MEDICAL MATERIEL	1	843	1,531	934	1,040	U	1-281
49	62779A TEST MEAS DIAGNOSTIC EQUIP TECH	1	921		703	2,257	U	1-284
50	62780A MEDICAL SYSTEMS IN CHEMICAL DEFENSE	1		1,000	1,093	1,969	U	1-287
51	62781A MILITARY ENERGY TECHNOLOGY	1			2,635	2,956	U	1-289
52	62782A VERY HIGH SPEED INTEGRATED CIRCUIT DEV	1		3,000	12,000		U	1-293
	TECHNOLOGY BASE		395,544	431,992	490,670	549,873		
53	62102A MATERIALS SCALE-UP	2	1,547	2,026	3,300	6,450	U	1-294
54	62104A FUELS AND LUBRICANTS (ADV DEV)	2			600	1,500	U	1-298
55	62201A AIRCRAFT POWER PLANTS AND PROPULSION	2	3,067	7,000	8,303	6,085	U	1-300
56	62206A AIRCRAFT WEAPONS	2	2,065		470	2,149	U	1-308
57	62207A AIRCRAFT AVIONICS EQUIPMENT	2	1,660	884	1,945	6,374	U	1-312
58	62209A AIR MOBILITY SUPPORT	2	608	206	650	1,990	U	1-315
59	62211A ROTARY WING CONTROLS, ROTORS + STRUCTURES	2	1,977	3,352	5,900	14,060	U	1-319
60	62212A TILT ROTOR RESEARCH AIRCRAFT	2	2,321	1,250			U	---
61	62213A ROTOR SYS RESEARCH AIRCRAFT (H)	2	502				U	---
62	62214A AERO INDIVIDUAL LIFT DEVICE	2				1,500	U	---
63	62216A SYNTHETIC FLIGHT SIMULATORS	2	734	400	1,200	5,550	U	1-324
64	62217A HELICOPTER MIL POTENTIAL INVESTIGATIONS	2				1,152	U	---
65	62218A AIRCRAFT EQUIP AND TECHNIQUES	2	701	306	1,250	1,300	U	1-328
66	62306A TERMINAL MORING SYSTEMS	2		4,100	9,500	3,000	U	1-332
67	62313A MSL/ROCKET COMPONENTS	2	3,621	844	2,100	2,500	U	1-336
68	62314A HI-ENERGY LASER COMPONENTS	2	13,530	17,292	19,000	19,206	U	1-341

UNCLASSIFIED

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

UNCLASSIFIED

DEPARTMENT OF THE ARMY
FY 1986 R O T + C PROGRAM

EXHIBIT R-1

APPROPRIATIONS 2040 A RESERACH DEVELOPMENT TEST + EVAL, ARMY

DATE: 22 JAN 1979

PROGRAM LINE ELEMENT NO	ITEM NUMERCLATURE	ACT	THOUSANDS OF DOLLARS				E	DESCRIPTIVE SUMMARY PAGE NUMBER
			FY 1978	FY 1979	FY 1980	FY 1981		
69	67002A ADVANCED LAND MOB SYSTEMS CONCEPTS	2	2,040	15,000	15,936	39,706	U	1-348
70	67006A LANDMINE WARFARE	2	1,763	4,690	2,328	3,995	U	1-355
71	67007A ARMY SMALL ARMS PROGRAM	2	2,065	215	500		U	1-359
72	67613A ADVANCED FUZE DESIGN	2	825	922	1,571	2,112	U	1-363
73	67014A INCAPACITATING CHEMICAL MUN CONCEPTS	2				3,150	U	---
74	63610A COUNTERMINE AND BARRIER DEVELOPMENT	2	1,090	2,024	2,059	4,935	U	1-367
75	67621A COMBAT VEHICLE PROPULSION SYS	2	2,713	5,700	3,816	7,000	U	1-371
76	63031A CMBI VEH TURRET AND CHASSIS SUBSYS	2	2,126	351	3,732	8,557	U	1-375
77	67702A ELECTRIC POWER SOURCES	2	2,634	4,535	5,055	5,711	U	1-380
78	67703A AJPE DEVELOPMENTS (H)	2	1,905				U	---
79	67709A ADV TECH DEMO OF TEST/MEASURE/DIAGNOSTIC EQ	2			702	1,900	U	1-384
80	67710A NIGHT VISION ADVANCED DEVELOPMENT	2	11,231	8,437	14,017	22,472	U	1-388
81	67720A BIOLOGICAL OFFENSE MATERIEL	2				4,101	U	---
82	67725A REMOTELY POWERED VEHICLES/DRONES	2	8,150	2,191	3,490	3,413	U	1-395
83	63731A MANPOWER AND PERSONNEL	2	3,775	1,823	3,121	3,868	U	1-400
84	67732A COMBAT MEDICAL MATERIAL (ADV)	2	94	106	111	145	U	1-404
85	63734A MILCON/ENGINEERING	2	248				U	---
86	67739A HUMAN FACTORS IN TNG/OPER EFFECT	2		1,691	2,309	3,195	U	1-406
87	67741A METEOROLOGIC EQUIPMENT DEVELOPMENT	2	1,137	590		1,789	U	---
88	63742A ADV ELECTRONIC DEVICES DEV	2	1,227	700	1,999	3,449	U	1-410
89	67743A EDUCATION AND TRAINING	2	5,835	6,170	8,370	8,623	U	1-415
90	67744A TRAINING SIMULATION	2	500	1,000	1,005	1,900	U	1-419
91	67748A ADV DEV OF AUTOMATIC TEST EQ/SYS	2	900		2,000	9,105	U	1-423

UNCLASSIFIED

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

DEPARTMENT OF THE ARMY
FY 1960 R U T + E PROGRAM

EXHIBIT R-1

APPROPRIATION: 2040 A RESEARCH DEVELOPMENT TEST + EVAL, ARMY

DATE: 22 JAN 1979

PROGRAM LINE ELEMENT NO	ITEM NOMENCLATURE	ACT	FY 1978	FY 1979	FY 1980	FY 1981 C	S E	DESCRIPTIVE SUMMARY PAGE NUMBER
								THOUSANDS OF DOLLARS
92	67749A TECHNICAL VULNERABILITY REDUCTION	2		1,500	2,600	2,975	U	1-427
93	67750A DRUG AND VACCINE DEVELOPMENT	2		1,000	2,550	3,623	U	1-432
	ADVANCED TECHNOLOGY DEVELOPMENT		43,407	96,373	133,153	218,780		
94	67304A DND ADVANCED TECHNOLOGY	3	107,297	113,510	113,668	127,509	U	11-1
95	67308A BALLISTIC MSL DEF SYS TECH	3	136,188	114,000	114,704	128,890	U	11-6
96	67735A MMCS ARCHITECTURE	3	2,456	700	811	750	U	11-11
97	77853A MHCS WIDE SUPPORT COMMUNICATIONS	3	953	2,000			U	---
98	77145A EUCOM C3 SYSTEMS	3	3,623	864	1,000		U	11-15
	STRATEGIC PROGRAMS		220,517	231,074	230,263	256,349		
99	67215A JOINT SURVIVABILITY INVESTIGATIONS	4	501	600	600	600	U	11-19
100	67302A HIGH-TO-MEDIUM AIR DEFENSE DEV	4				2,500	U	---
101	67503A SURF-TO-SURF MSL ROCKET SYS	4	46,445	62,000	72,250	71,300	U	11-22
102	67318A ARMY-NAVY AREA SAM	4	3,292				U	---
103	67519A CONVENTIONAL AIRFIELD ATTACK MISSILE	4	1,484				U	---
104	67320A ASSAULT BREAKER	4			9,200	7,900	U	11-35
105	67403A NAVSTAR GLOBAL POSITIONING SYS (H)	4	1,513				U	---
106	67604A NUCLEAR MUNITIONS AND RADIACS	4	1,907	2,399				11-40
107	67508A WEAPONS AND AMMUNITION	4	4,791	500	3,742	9,105	U	11-45
108	67612A ANTI-LAND GUIDED MSL IMPROVEMENTS	4	1,930	6,000	12,000	29,250	U	11-49
109	67615A LETHAL CHEMICAL MUNITIONS CONCEPTS	4	150	721	2,340	1,654	U	11-51
110	67619A COUNTERMINE AND BARRIER SYS	4	500	812	2,150	5,000	U	11-57
111	67623A LANDING SYSTEMS	4			2,240	4,120	U	11-60

DEPARTMENT OF THE ARMY
FY 1983 R D T & E PROGRAM

EXHIBIT R-1

APPROPRIATION: 2040 A RESEARCH DEVELOPMENT TEST + EVAL, ARMY

DATE: 22 JAN 1979

THOUSANDS OF DOLLARS

DESCRIPTIVE SUMMARY	PAGE NUMBER
------------------------	-------------

PROGRAM LINE NO	ITEM NOMENCLATURE	ACT	THOUSANDS OF DOLLARS				E SUMMARY PAGE NUMBER
			FY 1970	FY 1979	FY 1980	FY 1981 C	
1112	53624A MOBILITY	4		98	300		U 11-62
1113	63627A COMBAT SUPPORT MUNITIONS	4	2,665	2,346	2,620	5,231	U 11-65
1114	63628A FIELD ARTILLERY AMMO DEV	4	3,430	9,173	5,200	14,311	U 11-69
1115	63629A FIELD ARTILLERY CANNON SYSTEMS	4	1,607	2,035	3,306	8,000	U 11-75
1116	63630A ADV HELM INF CMBT VEH STUDIES (H)	4	2,500				U ---
1117	63632A ARMORED COMBAT SUPPORT VEHICLE FAMILY	4		302	4,400	7,300	U 11-79
1119	63706A UNATTENDED GROUND SENSORS (H)	4	710				U ---
1110	63705A PHYSICAL SECURITY	4	200	3,500	3,500	3,541	U 11-83
1120	63706A IFF DEVELOPMENTS	4	365	3,463	4,050	5,700	U 11-88
1121	63707A COMMUNICATIONS DEVELOPMENT	4	2,505	9,754	6,700	6,500	U 11-93
1122	63711A AGST SURV/EM SELF-PROTECTION	4	2,256	3,793	6,995	7,249	U 11-98
1123	63712A MAPPING AND GEODESY	4	143	2,702	930	1,077	U 11-103
1124	63719A SPECIAL PURPOSE DETECTORS	4		900	3,000	5,000	U 11-107
1125	63721A CHEMICAL DEFENSE MATERIEL CONCEPTS	4	2,215	10,792	17,345	25,900	U 11-110
1126	63722A TACTICAL OPERATIONS SYSTEM (TJSA)	4	8,776	36,772	36,402	10,000	U 11-116
1127	63723A COMMAND AND CONTROL	4	8,077	10,984	10,590	24,563	U 11-122
1128	63726A COMBAT SUPPORT EQUIPMENT	4	4,704	7,006	8,751	12,949	U 11-127
1129	63730A TACTICAL SURVEILLANCE SYSTEM	4					U 11-131
1130	63737A ANTI-RADIATION MSL COUNTER MEASURES	4					U 11-134
1131	63746A SHORT RANGE AIM DEF (SHORAD) COMB/CONTROL	4		500	3,000	3,600	U 11-138
1132	63745A TAC ELECTRONIC SPT MEASURE SYS	4					U 11-144
1133	63746A SINGLE CHANNEL GROUND/ABN AUDIO SUB-SYS	4	8,026	12,721	10,501	14,190	U 11-150

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

DEPARTMENT OF THE ARMY
FY 1980 R U T + E PROGRAM

EXHIBIT R-1

APPROPRIATION: 2J40 - RESEARCH DEVELOPMENT TEST + EVAL, ARMY

DATE: 22 JAN 1979

PROGRAM LINE ELEMENT NO	ITEM NOMENCLATURE	ACT	THOUSANDS OF DOLLARS				DESCRIPTIVE SUMMARY PAGE NUMBER
			FY 1978	FY 1979	FY 1980	FY 1981 C	
114	64255A TAC ELEC C/M SYS	4					11-156
115	64201A AIRCRAFT AVIONICS	4	3,651	6,359	756	4,201 U	11-165
116	64202A AIRCRAFT WEAPONS	4	15,594	10,460	5,302	5,134 U	11-169
117	64203A AERIAL SCOUT	4		5,487	12,500	55,300 U	11-173
118	64204A AIR MOBILITY SUPPORT EQUIPMENT	4	228	443	450	1,450 U	11-178
119	64206A UH-60A BLACK HAWK	4	37,935	2,972		U	---
120	64207A ADVANCED ATTACK HELICOPTER	4	164,409	177,449	176,194	137,339 U	11-182
121	64212A COBRA IOM	4	12,770	10,827	1,000	U	11-191
122	64213A CH-47 MODERNIZATION	4	32,057	19,540	23,146	564 U	11-195
123	64215A COMPOSITE ROTOR BLADES	4	34	2,502		U	---
124	64217A SYNTHETIC FLIGHT TRAINING SYSTEMS	4	5,071	4,590	1,198	6,660 U	11-202
125	64218A AIRDROP EQUIP DEVELOPMENT	4	437	652	950	2,404 U	11-206
126	64306A STINGER	4	11,956	24,582	17,577	5,384 U	11-210
127	64307A PATRIOT (SAM-D)	4	214,427	228,392	128,718	31,668 U	11-218
128	64308A PRECISION LASER DESIGNATOR	4	4,891	9,193	3,680	U	11-232
129	64309A ROLAND	4	75,403	22,663	11,239	6,999 U	11-236
130	64310A HELIBORNE MISSILE-HELLFIRE	4	52,302	65,050	50,000	38,616 U	11-245
131	64311A PERSHING II	4	29,845	42,000	144,860	137,000 U	11-255
132	64312A ANTI-RADIATION PROJECTILE (ARP)	4				6,517 U	---
133	64313A GRASS BLADE	4	14,209	27,200	30,215	9,780 U	11-263
134	64316A FIRE AND FORGET HELFIRE	4			15,000	35,100 U	11-265
135	64318A DIVISION AIR DEFENSE (DIVAD) GUN	4	16,972	75,717	25,719	40,325 U	11-271
136	64601A INFANTRY SUPPORT WEAPONS	4	5,628	6,964	5,849	2,849 U	11-279

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

DEPARTMENT OF THE ARMY									
FY 1980 R U T + E PROGRAM									
EXHIBIT R-1									
APPROPRIATIONS 2040 A RESEARCH DEVELOPMENT TEST + EVAL, ARMY									
PROGRAM LINE ELEMENT NO NUMBER	ITEM NOMENCLATURE	ACT	DATE: 22 JAN 1979				FY 1981 C	E	DESCRIPTIVE SUMMARY PAGE NUMBER
			THOUSANDS OF DOLLARS						
			FY 1978	FY 1979	FY 1980	FY 1981 C			
157	64602A WEAPONS + AMMUNITION	4	2,052	4,652	1,400	6,209	U	11-285	
158	64603A NUCLEAR MUNITIONS	4	10,223	16,904				11-290	
159	64605A FLD ARTY WPNS/AMMO (105MM)	4	684	1,111	640	6,325	U	11-301	
160	64606A EXPLOSIVE DEMOLITIONS	4	870	2,063	289	1,900	U	11-305	
161	64608A ARMY SMALL ARMS PROGRAM	4	1,000	1,575	1,460	100	U	11-309	
162	64609A COMBAT SUPPORT SYSTEMS	4	2,720	2,248	1,028	3,168	U	11-313	
163	64610A LETHAL CHEMICAL MUNITIONS	4	2,734	213		1,032	U	---	
164	64612A COUNTERMINE AND BARRIERS	4	4,944	9,738	4,593	5,500	U	11-317	
165	64613A INCAPACITATING CHEMICAL MUNITIONS	4				1,550	U	---	
166	64614A FLD ARTY WPNS/AMMO (155MM)	4	2,202	10,535	7,133	4,910	U	11-322	
167	64615A M60A1 THERMAL SIGHT	4	3,351	1,046			U	---	
168	64616A INFANTRY FIGHTING VEHICLE	4	31,564	28,875	32,973	14,437	U	11-329	
169	64617A VEH RAPID FIRE WPN SYSTEM-BUSHMASTER	4	12,184	7,180	4,108		U	11-338	
170	64619A LANDMINE WARFARE	4	8,001	14,886	8,850	9,572	U	11-346	
171	64620A TANK SYSTEMS	4	119,643	78,376	31,569	2,511	U	11-354	
172	64621A COPPERHEAD	4	35,999	12,983	7,108	8,000	U	11-362	
173	64623A VIPER	4	6,515	6,283	3,009		U	11-369	
174	64624A HIGH MOBILITY WPNS CARRIER	4			2,500	2,400	U	11-373	
175	64626A FORWARD OBSERVER VEHICLE	4	2,655	1,000	6,050	3,579	U	11-377	
176	64627A FLD ARTY WPNS/AMMO, 8-INCH	4	2,338	887		2,300	U	---	
177	64628A INDIRECT FIRE TRAINING MUNITIONS	4		2,501	1,500	650	U	11-381	
178	64629A CAVALRY FIGHTING VEHICLE	4	174	1,384	331	250	U	11-385	
179	64630A TANK GUN COOPERATIVE DEVELOPMENT	4	1,400	35,600	51,890	46,530	U	11-393	

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

DEPARTMENT OF THE ARMY
FY 1980 R U T + C PROGRAM

EXHIBIT R-1

ASSIGNATIONS: 2040 A RESEARCH DEVELOPMENT TEST + EVAL, ARMY

DATE: 22 JAN 1979

LINE NUMBER	ORGAN NUMBER	ITEM DESCRIPTION	ACT	THOUSANDS OF DOLLARS				DESCRIPTIVE SUMMARY PAGE NUMBER
				FY 1978	FY 1979	FY 1980	FY 1981 C	
190	64701A	COMM ENGINEERING DEV	4	3,318	4,135	5,267	8,213 U	III-1
191	64704A	UNATTENDED GROUND SENSORS	4	7,030	4,000	2,000	3,500 U	III-7
192	64706A	RADIOLOGICAL DEFENSE EQUIPMENT	4	605	1,055	948	1,176 U	III-11
193	64709A	IFF EQUIPMENT	4			1,700	2,790 U	III-15
194	64710A	NIGHT VISION DEVICES	4	2,156	3,012	3,000	5,463 U	III-19
195	64711A	ACFT SURVIVEM SELF-PROTECTION SYS	4	9,479	9,082	9,928	11,995 U	III-23
196	64712A	TAC DATA SYS INTEROPERABILITY	4	2,692	1,500	6,984	8,100 U	III-31
197	64714A	TACTICAL ELECTRICAL POWER SOURCES	4	150	3,027	5,095	5,050 U	III-36
198	64716A	MAPPING AND GEODESY	4	2,853	840	1,539	1,875 U	III-40
199	64717A	GENERAL COMBAT SUPPORT	4	3,279	6,106	5,777	10,266 U	III-45
199	64718A	PHYSICAL SECURITY	4	1,013	5,400	4,341	4,738 U	III-50
191	64723A	SPECIAL PURPOSE DETECTORS	4	1,137	2,327	99	151 U	III-55
192	64724A	BIOLOGICAL DEFENSE MATERIAL	4	4,218	3,287	4,495	3,019 U	III-58
193	64725A	CHEMICAL DEFENSE MATERIAL	4	6,021	10,628	18,725	24,354 U	III-61
194	64727A	COMMAND AND CONTROL	4	4,968	13,627	13,591	15,100 U	III-68
195	64728A	FAMILY OF MIL ENGR CONSTRUCTED (FAMCEP)	4	4,073	2,275	25	300 U	III-79
196	64729A	COUNTER MOUNT RADAR	4	5,226	4,301	1,600	U	III-82
197	64730A	REMOTELY PILOTED VEHICLES	4		18,203	49,400	29,940 U	III-87
199	64731A	COUNTER BATTERY RADAR	4	11,589	6,849	2,647	U	III-91
199	64740A	TACTICAL SURVEILLANCE SYSTEM	4					III-99
200	64745A	TAC ELECTRONIC SPT MEASURE SYS	4					III-102
201	64746A	AUTOMATIC TEST SUPPORT SYSTEMS	4	2,840			U	---
202	64747A	JOINT COMB AND INTEROP (CAMO-CAI)	4	2,340			U	---

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

APPROPRIATIONS 24-0 A RESEARCH DEVELOPMENT TEST & EVAL, ARMY		DEPARTMENT OF THE ARMY FY 1980 N U T & E PROGRAM		EXHIBIT R-1		DATE: 22 JAN 1979		THOUSANDS OF DOLLARS		DESCRIPTIVE SUMMARY PAGE NUMBER	
LINE ELEMENT NO	ITEM NUMERICAL	ACI	FY 1978	FY 1979	FY 1980	FY 1981	E	S		C	
203	647494 STANJOFF TARGET ACQUISITION SYSTEM	4	13,125	56,083	66,460	50,165	U	III-112	---	---	---
204	647494 TACTICAL OPERATIONS SYSTEMS	4				12,463	U	---	---	---	---
205	64750A TAC ELCC G/M SYS	4						III-121	---	---	---
206	64778A NAVSTAR GPS USER EQUIPMENT	4	5,513	9,509	15,503	25,100	U	III-128	---	---	---
207	64779A JINTACCS	4		13,520	29,997	30,216	U	III-132	---	---	---
208	64780A JOINT CB CONTACT POINT AND TEST	4	569	781	824	1,039	U	III-140	---	---	---
209	64780A BATTLEFIELD SYSTEMS INTEGRATION	4	3,583	3,000	3,300	5,300	U	III-152	---	---	---
210	237243 HV ANTI-TANK ASSAULT WPN SYS (TOM)	4	1,014	17,200	26,200	17,700	U	III-155	---	---	---
211	237264 TAC FIRE DIR SYS (TACFIRE)	4	830	744			U	---	---	---	---
212	237274 MED ANTI-TANK ASSAULT WPN (ORAGON)	4	2,207	407			U	---	---	---	---
213	23730A CHAMPANAL	4	4,200	100	6,052		U	III-164	---	---	---
214	237310 SAM HAWK/HAWK IMP PROG	4	12,504	5,143	10,100	6,420	U	III-176	---	---	---
215	237334 LANCE (NNL) WARHEAD	4	3,885	5,110	3,346	971	U	III-185	---	---	---
216	237354 MODAL TANK PRODUCT IMP PRG	4	9,900	9,996	6,600	4,500	U	III-193	---	---	---
217	238104 JT TACTICAL COMM PROG (TRI-TAC)	4	57,591	55,210	54,012	35,976	U	III-198	---	---	---
	TACTICAL PROGRAMS		1,304,269	1,403,152	1,530,717	1,305,261					
219	21022A SCIENTIFIC AND TECH INTELLIGENCE	5						---	---	---	---
219	21111A STRATEGIC ARMY COMMUNICATIONS (STARCOM)	5	299	1,000	500	550	U	III-221	---	---	---
220	21126A LONG-HAUL COMMUNICATIONS (DUS)	5	1,185	2,507	2,600	7,240	U	III-224	---	---	---
221	21142A SATCOM GROUND ENVIRONMENT	5	8,654	7,097	20,600	22,079	U	III-228	---	---	---

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

DEPARTMENT OF THE ARMY
FY 1980 M U T + E PROGRAM

EXHIBIT R-1

APPROPRIATION: 2040 A RESEARCH DEVELOPMENT TEST + EVAL, ARMY

DATE: 22 JAN 1979

PROGRAM LINE ELEMENT NUMBER	ITEM NOMENCLATURE	ACT	THOUSANDS OF DOLLARS				DESCRIPTIVE SUMMARY PAGE NUMBER
			FY 1978	FY 1979	FY 1980	FY 1981 C	
222	63401A COMSEC	5	14,113	16,177	29,507	35,064	111-241
	INTELLIGENCE AND COMMUNICATIONS						
223	6315A TARGET MISSILES	6					111-245
224	6710A EW VULNERABILITY/SUSCEPTIBILITY	6					111-250
225	63730A NON-SYSTEM TRAINING DEVICES	6	4,402	5,300	11,300	10,500	111-260
226	6747A SOLDIER SUPPORT/SURVIVABILITY	6	1,419	2,000	3,415	6,321	111-269
227	6713A COMBAT FEEDING, CLOTHING AND EQUIPMENT	6	3,343	1,385	4,529	5,334	111-273
228	6715A NON-SYSTEM TNG DEVICES ENGR	6	8,148	10,006	9,416	16,100	111-277
229	6726A METEOROLOGICAL EQUIPMENT SYSTEMS	6	959	3,209	8,077	3,291	111-284
230	65101A HQ DA OPERATIONS RESEARCH + ANALYSES	6	3,331	1,700		500	---
231	65102A INADOC STUDIES AND ANALYSES	6	2,560	2,000	2,330	3,020	111-288
232	65201A AVIATION ENGINEERING FLIGHT ACTIVITY	6	3,303	3,785	4,000	4,100	111-291
233	65301A KWAJALEIN MISSILE RANGE	6	82,239	87,826	93,667	99,300	111-294
234	65702A SUPPORT OF DEVELOPMENT TESTING	6	17,371	20,453	23,793	23,181	111-299
235	65706A MATERIAL SYSTEMS ANALYSIS	6	8,715	9,300	10,279	11,179	111-308
236	65707A TRADOC OPERATIONAL TESTING	6	15,044	21,990	26,935	28,173	111-312
237	65708A THEATER NUCLEAR FORCE SURVIVABILITY	6	1,390	1,999	2,480	2,480	111-326
238	65709A EXPLOITATION OF FOREIGN ITEMS	6	945	1,500	1,500	1,500	111-329
239	65712A OT&A OPERATIONAL TESTING	6	9,001	9,199	12,613	10,850	111-333
240	65714A FOREIGN WEAPONS EVALUATION	6	944	2,700			---
241	65801A PROGRAM-WIDE ACTIVITIES	6	57,757	43,304	52,210	66,362	111-337
242	65802A INFL COOPERATIVE RESEARCH AND DEV	6	581	600	600	600	111-345
243	65803A TECHNICAL INFO ACTIVITIES	6	3,408	3,559	4,890	4,899	111-348

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

APPROPRIATION 2040 A RESEARCH DEVELOPMENT TEST + EVAL, ARMY		DEPARTMENT OF THE ARMY FY 1980 M O T + E PROGRAM		EXHIBIT R-1 DATE: 22 JAN 1979		THOUSANDS OF DOLLARS		DESCRIPTION
PROGRAM LINE ELEMENT NO NUMBER	ITEM NOMENCLATURE	ACT	FY 1978	FY 1979	FY 1980	FY 1981 C		SUMMARY PAGE NUMBER
244	ACCOMMODATION MAJOR RANGE + TEST FACILITIES	6	158,380	169,800	182,141	192,107	U	III-352
245	DOJ MUNITIONS EFFECT/EXPLOSIVE SAFETY STAMJ	6	4,416	5,036	5,492	6,489	U	III-372
246	DEFENSEMIDE MISSION SUPPORT	6	400,477	26,450	25,114	25,714	U	III-377
				458,096	504,643	547,098		
TOTAL RESEARCH DEVELOPMENT TEST + EVAL, ARMY			2,410,327	2,709,464	2,927,000	2,993,225		

Performer Distribution

Section 3

DEPARTMENT OF THE ARMY
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY
PERFORMER DISTRIBUTION
(\$ in Thousands)

Appropriation: Research, Development, Test, and Evaluation, Army

	Total Obligational Authority		
	FY 1978	FY 1979	FY 1980
1. For operation of installations of the reporting DOD Component			
Government operated	719,861	784,717	804,961
2. For operation of installations of the reporting DOD Component			
Contractor operated	55,234	56,685	59,969
3. For contracts directly in support of work actually performed at installations of the reporting DOD Component	49,930	53,442	54,231
4. For work assigned to other Department of Defense activities	224,501	257,678	248,654
5. For work assigned to activities of other Government agencies	12,747	20,347	21,475
6. For work performed by industrial contractors ("profit" organizations).	1,274,141	1,442,115	1,630,561
7. For work performed by educational institutions			
a. Designated Fed Contract Res Centers	12,642	14,399	14,817
b. Other Institutions	47,873	55,365	65,596
8. For work performed by other "non-profit" organizations			
a. Designated Fed Contract Res Centers	4,423	7,247	8,874
b. Other Institutions	16,975	17,469	17,862
9. Total Research, Development, Test, and Evaluation, Army Appropriation.	2,418,327	2,709,464	2,927,000
			2,993,225

Installation Analysis

DEPARTMENT OF THE ARMY
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY
INSTALLATION ANALYSIS - IN-HOUSE

Section 4

This installation analysis indicates the resources of dollars and manpower utilized by Army installations in the accomplishment of the in-house research, development, test, and evaluation effort, including contractor operated installations, under the management control of the Army. Installations reported include both installations classified as research, development, or test installations and research, development, or test units located at multi-mission installations. Funds being reported cover both direct costs and indirect or support costs. These funds are a part of project costs shown in the budget for the various projects. The amounts reflected under the category "RDTE Funds" include funds received directly through command channels, and reimbursable RDTE effort performed for other Army activities and other Department of Defense agencies. "All Other Funds" reflect the in-house effort at multi-mission installations for other than Research, Development, Test, and Evaluation, Military Construction and Military Personnel costs. Military Personnel costs reflect those military personnel assigned to RDTE activities and other military personnel located at the installation in support of non-RDTE activities at multi-mission posts.

The personnel reflected are reported in terms of man years utilized as opposed to the number of personnel spaces. Spaces assigned to support Army RDTE effort are divided between spaces charged directly to the RDTE appropriation as reflected in the personnel summary and spaces assigned to the Army Industrial Fund and indirectly charged to the RDTE appropriation. Contractor personnel shown are engaged in direct support or operation of Army installations.

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

INDEX

Item No.	Installations	Page No.
<u>Army Industrial Fund Installations</u>		
1.	Aberdeen Proving Ground, Aberdeen, Maryland.	29
2.	Armament Readiness Command (Project Manager M10E2 only), Rock Island, Illinois.	29
3.	Armament Research & Development Command, Dover, New Jersey	29
4.	Dugway Proving Ground, Dugway, Utah.	30
5.	Harry Diamond Laboratories, Adelphi, Maryland.	30
6.	Materials and Mechanics Research Center, Watertown, Massachusetts.	30
7.	Missile Materiel Readiness Command (Includes RDTE Project Managers only), Redstone Arsenal, Alabama.	30
8.	Missile Research and Development Command, Redstone Arsenal, Alabama.	31
<u>Army Non-Industrial Fund Installations</u>		
9.	Aberdeen Proving Ground, Aberdeen, Maryland.	31
10.	Aeromedical Research Laboratory, Ft Rucker, Alabama.	32
11.	Air Defense Board, Ft Bliss, Texas	32
12.	Airborne Board, Ft Bragg, North Carolina	32
13.	Aircraft Development & Test Activity, Ft Rucker, Alabama	32
14.	Armor and Engineer Board, Ft Knox, Kentucky.	33
15.	Army Communicative Technical Office, Ft Eustis, Virginia	33
16.	Army Engineer Flight Activity, Edwards Air Force Base, California.	33
17.	Army Institute of Dental Research, Washington, D.C.	33
18.	Army Materiel Development & Readiness Command, Alexandria, Virginia.	34
19.	Army Materiel Development & Readiness Command, Program Managers, Various Locations	34
20.	Army Research Office, Research Triangle Park, North Carolina	34
21.	Atmospheric Science Laboratory, White Sands Missile Range, Las Cruces, New Mexico.	35
22.	Aviation Test Board, Ft Rucker, Alabama.	35
23.	Aviation Research and Development Command, St Louis, Missouri.	35
24.	Avionics Laboratory, Ft Monmouth, New Jersey	35
25.	Avionics Research Center, Moffat Field, California	36
26.	Ballistic Missile Defense Advanced Technology Center, Huntsville, Alabama.	36
27.	Ballistic Missile Defense Program Office, Alexandria, Virginia	36
28.	Ballistic Missile Defense Systems Command, Huntsville, Alabama	36

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

INDEX

Page No.

Item No. Installation
Army Non-Industrial Fund Installations

29.	Cold Regions Research & Development Laboratory, Hanover, New Hampshire.	37
30.	Cold Regions Test Center, Ft Greely, Alaska	37
31.	Communications and Electronics Test Board, Ft Gordon, Georgia	37
32.	Communications Research and Development Command, Ft Monmouth, New Jersey.	37
33.	Computer Systems Command, Ft Belvoir, Virginia	38
34.	Construction Engineering Research Laboratory, Champaign, Illinois	38
35.	Corps of Engineer RDTE Headquarters, Washington, DC	38
36.	Dugway Proving Ground, Dugway, Utah	38
37.	Electronic Proving Ground, Ft Huachuca, Arizona	39
38.	Electronics Research and Development Command Headquarters, Adelphi, Maryland.	39
39.	Electronics Research & Development Command, Ft Monmouth, New Jersey	39
40.	Engineer Topographic Laboratory, Ft Belvoir, Virginia	39
41.	Engineer Waterway Experimental Center, Vicksburg, Mississippi	40
42.	Facility Engineer Support Agency, Ft Belvoir, Virginia	40
43.	Field Artillery Board, Ft Sill, Oklahoma	40
44.	Foreign Science & Technology Center, Charlottesville, Virginia	41
45.	Infantry Board, Ft Benning, Georgia	41
46.	Institute of Surgical Research, Ft Sam Houston, Texas	41
47.	Intelligence and Security Test Board, Ft Huachuca, Arizona	41
48.	Kwajalein Missile Range, Marshall Islands	42
49.	Letterman Army Institute of Research, San Francisco, California	42
50.	Liaison Field Offices, Various Locations (ARI)	42
51.	Liaison Offices, Various Locations (DARCOM)	43
52.	Medical Bio-Engineering Laboratory, Ft Detrick, Maryland	43
53.	Medical R&D Command, Ft Detrick, Maryland	43
54.	Medical Research Institute of Infectious Diseases, Ft Detrick, Maryland	43
55.	Mobility Equipment Research and Development Command, Ft Belvoir, Virginia	44
56.	Natick Research and Development Command, Natick, Massachusetts	44
57.	Night Vision Laboratory, Ft Belvoir, Virginia	44

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

INDEX

<u>Item No.</u>	<u>Installation</u>	<u>Page No.</u>
	<u>Army Non-Industrial Fund Installations</u>	
58.	Research Institute for Behavioral Sciences, Alexandria, Virginia.	45
59.	Research Institute of Environmental Medicine, Natick, Massachusetts	45
60.	Signal Warfare Laboratory, Vint Hill Farms, Virginia.	45
61.	Standardization Group, Australia.	46
62.	Standardization Group, Canada	46
63.	Standardization Group, United Kingdom	46
64.	Tank Automotive Research & Development Command, Warren, Michigan.	46
65.	Test and Evaluation Command Headquarters, Aberdeen, Maryland.	47
66.	Tri-Service Tactical Communications Systems (TRI-TAC), Ft Monmouth, New Jersey.	47
67.	Tropic Test Center, Panama, Canal Zone.	47
68.	Walter Reed Army Institute of Research, Washington, DC.	47
69.	White Sands Missile Range, Las Cruces, New Mexico	48
70.	Yuma Proving Ground, Yuma, Arizona.	48

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location Army Industrial Fund Installations		TOA (\$ in Thousands)										PERSONNEL (Man-Years)														
		RDTE Funds					All		Mil. Pers.			Civil Service					Contractor					Mil. Pers.				
		Mgmt Bureau		Other Army		DOD		Other Funds		Sub-Total		RDTE		Other		Total		Paid From Army RDTE		Paid From Other RDTE		Paid From Other RDTE Funds Work		In		
		FY																								Total
1.																										
Aberdeen		78	94461	18316	2981	12615	128373	6948	30	135351	3107	34	62	-	-	-	453	2	3658							
Proving		79	106994	18142	2981	12606	140723	6568	29	147320	3178	33	62	-	-	-	455	2	3730							
Ground, Aberdeen, Maryland		80*	59039	17283	3580	11534	91436	1930	134	93500	1556	-	199	-	-	-	144	10	1909							
		81*	55925	22825	3030	3854	85634	949	158	86741	1613	-	17	-	-	-	66	11	1707							
2.																										
Armament		78	254	-	-	480	734	-	0	734	4	-	17	-	-	-	-	-	21							
Readiness		79	677	-	-	507	1184	14	43	1241	2	-	19	-	-	-	1	3	25							
Command (Project Manager)		80	80	-	-	506	586	13	40	639	2	-	19	-	-	-	1	3	25							
M110E2 only), Rock Island, Illinois		81	205	-	-	506	711	14	43	768	2	-	19	-	-	-	1	3	25							
3.																										
Armament		78	49981	23042	2206	-	75229	613	767	76609	1220	46	-	-	-	-	40	50	1356							
Research & Development		79	56260	19219	2550	-	78029	721	780	79530	1499	66	-	-	-	-	50	54	1669							
Development		80	54192	20297	2485	-	76974	670	724	78368	1464	64	-	-	-	-	50	54	1632							
Command, New Jersey		81	54634	18437	2315	-	75386	690	849	76925	1433	59	-	-	-	-	48	59	1599							

1/ Exclusive of Military Personnel and Military Construction

* AMSAA, HEL, and TECOM go into Non-AIF FY80 and 81. What remains is ARRADCOM.

INSTALLATION ANALYSIS - IN-HOUSE

1/ Exclusive of Military Personnel and Military Construction

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

		TOA (\$ in Thousands)				PERSONNEL (Man-Years)												
Installation and Location	FY	RDTE Funds			All Other Funds	Sub-Total	Mil. Pers.			Civil Service			Contractor				Other	Total
		Mgmt Bureau	Other Army	DOD			RDTE	Other	Total	Paid From Army RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE			
8.																		
Missile Research and Development Command, Redstone Arsenal, Alabama	78	60426	12730	1925	1632	76713	2070	-	78783	1505	22	22	-	-	135	-	1684	
	79	71372	10051	1634	2231	85288	1689	144	87121	1430	30	93	-	-	117	10	1680	
	80	59790	9391	1511	3723	74415	1541	134	76090	1378	28	90	-	-	115	10	1621	
	81	60734	6449	1485	5106	73774	1151	173	75098	1277	27	104	-	-	80	12	1500	
9.																		
Subtotal Army Industrial Fund	78	245510	76444	15680	34852	372486	12606	1119	386211	6807	136	1549**	1	-	822	73	9388	
	79	269817	69322	15442	30600	385181	11865	1299	398345	7082	163	1619**	1	-	822	90	9777	
	80*	196884	60121	13810	28439	299254	4529	1072	304855	4829	102	1681**	1	-	338	80	7031	
	81*	196286	62009	13130	21430	292855	3206	1266	297327	4754	96	1513**	1	-	223	88	6675	
10.																		
Aberdeen Proving Ground, Maryland	78	In AIF for FY 78 & 79																
	79	48532	263	50	-	48845	4864	482	54191	1686	61	208	-	-	363	36	2354	
	80	46226	276	50	-	46552	5221	518	52291	1729	60	208	-	-	363	36	2396	
	81	46226	276	50	-	46552	5221	518	52291	1729	60	208	-	-	363	36	2396	

I/ Exclusive of Military Personnel and Military Construction

* FY80 and 81 reflects transfer of TECOM, HEL, AMSAA, and Dugway, into Non-AIF

** Includes AIF all years.

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location		TOA (\$ in Thousands)										PERSONNEL (Man-Years)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		RDTE Funds					All					Mil. Pers.					Civil Service					Contractor																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		Mgmt					Other					Sub-					RDTE					Other					Paid					Mil. Pers.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
		Bureau	Other	Army	DOD	Other	Funds ^{1/}	Total	RDTE	Other	Total	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE	From RDTE

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

TOA (\$ in Thousands)

PERSONNEL (Man-Years)

PERSONNEL (Man-years)																
Total (in thousands)																
Installation and Location Army Non-Industrial Fund Installations	FY	RDTE Funds			All Other Funds ^{1/}	Sub-Total	Mil. Pers.		Civil Service			Contractor			Total	
		Mgmt Bureau	Other Army	DOD			RDTE	Other	Total	Paid From Army RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	In Work		
14. Armor and Engineer Board, 79	78	3590	-	-	2413	6003	3604	-	9607	101	-	-	-	235	-	336
Ft Knox, 80	80	4254	-	-	5664	9360	3392	-	12752	101	-	-	-	235	-	336
Kentucky 81	81	3717	-	-	6151	10405	3149	-	13554	101	-	-	-	235	-	336
					5950	9667	3380	-	13047	101	-	-	-	235	-	336
15. Reorganization effective 19 June 1978																
Army Communicative Technical 79	79	416	-	-	-	416	29	-	445	13	-	-	-	2	-	15
Office, Ft Eustis, Virginia 80	80	429	-	-	-	429	27	-	456	13	-	-	-	2	-	15
81	81	429	-	-	-	429	29	-	458	13	-	-	-	2	-	15
16. Army Engineer 78	78	3276	470	-	242	3988	844	-	4832	107	-	-	7	55	-	169
Flight Activ-ity, Edwards 79	79	3785	330	-	250	4365	953	-	5318	100	-	-	7	66	-	173
80	80	6200	-	-	-	6200	884	-	7084	100	-	-	7	66	-	173
Air Force Base, California 81	81	4100	-	-	-	4100	949	-	5049	100	-	-	7	66	-	173
17. Army Institute of Dental Research, Washington, DC 78	78	964	-	-	146	1110	966	-	2076	25	-	-	-	63	-	88
79	79	1109	-	-	462	1571	909	-	2480	25	-	-	-	63	-	88
80	80	1131	-	-	462	1593	844	-	2437	25	-	-	-	63	-	88
Washington, DC 81	81	1154	-	-	462	1616	906	-	2522	25	-	-	-	63	-	88

^{1/} Exclusive of Military Personnel and Military Construction.

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location	FY	TOA (\$ in Thousands)				PERSONNEL (Man-Years)									
		RDTE Funds		All		Civil Service		Contractor		Mil. Pers.		Other		Total	
		Mgmt Bureau	Other Army	DOD	Other Funds	Sub-Total	Mil. Pers.	Paid From Army	Paid From RDTE	Paid From Other	Paid From RDTE	Paid From Other	Paid From RDTE	Paid From Other	Total
18. Army Materiel Development & Readiness Command, Alexandria, Virginia	78	4687	-	-	-	4687	583	116	-	-	-	-	-	38	154
	79	4387	-	-	-	4387	549	116	-	-	-	-	-	38	154
	80	4387	-	-	-	4387	509	116	-	-	-	-	-	38	154
	81	4387	-	-	-	4387	547	116	-	-	-	-	-	38	154
19. Army Materiel Development & Readiness Command, Program Managers, Various Locations	78	67288	9047	400	644	77379	3113	431	-	27	603	-	203	25	1289
	79	93959	5895	900	2312	103066	1862	430	-	69	445	-	129	35	1108
	80	117376	10757	1000	2372	131505	1715	379	-	69	368	-	128	29	973
	81	38838	6023	600	2480	47941	1438	333	-	69	204	-	100	7	713
20. Army Research Office, Research, Triangle Park, North Carolina	78	2832	-	-	57	2889	31	93	-	1	-	-	2	-	96
	79	3100	-	-	-	3100	29	94	-	-	-	-	2	-	96
	80	4800	-	-	-	4800	27	94	-	-	-	-	2	-	96
	81	4800	-	-	-	4800	29	94	-	-	-	-	2	-	96

1/ Exclusive of Military Personnel and Military Construction.

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location		TOA (\$ in Thousands)										PERSONNEL (Man-Years)												
		RDTE Funds					All Other Funds					Civil Service					Contractor							
		Mgmt Bureau	Other Army	Other DOD	Sub-Total	Mil. Pers.	RDTE	Other	Total	Paid From Army	Paid From Other	Paid From RDTE	Paid From Other	Paid From RDTE	Paid From Other	Paid From RDTE	Mil. Pers.							
FY																								
Army Non-Industrial Fund Installations																								
21.																								
Atmospheric	78	9453	218	487	64	10222	6764	-	16986			195			8				1	22		441	-	667
Science Laboratory, White Sands Missile Range, Las Cruces, New Mexico	79	9539	55	340	65	9999	6280	-	16279			181			5				2	-		435	-	623
	80	10226	50	300	60	10636	5829	-	16465			183			4				2	-		435	-	624
	81	10954	50	200	60	11264	6256	-	17520			184			3				2	-		435	-	624
22.																								
Aviation Board	78	1592	-	-	-	1592	1165	-	2757			36			-				-	-		76	-	112
Ft Rucker, Alabama	79	2120	-	-	-	2120	1097	-	3217			36			-				-	-		76	-	112
	80	2154	-	-	-	2154	1018	-	3172			36			-				-	-		76	-	112
	81	1967	-	-	-	1967	1093	-	3060			36			-				-	-		76	-	112
23.																								
Aviation Research and Development Command, St Louis, Missouri	78	11787	1605	-	870	14262	445	230	14937			361			-				28	-	29	15		433
	79	13855	3277	-	835	17967	462	245	18674			384			-				28	-	32	17		461
	80	15375	3721	-	846	19942	375	228	20545			407			-				28	-	28	17		480
	81	10650	3848	-	846	15344	388	244	15976			404			-				28	-	27	17		476
24.																								
Avionics Laboratory, Ft Monmouth, New Jersey	78	4243	-	-	-	4243	138	-	4381			105			2				66	14	-	9	-	196
	79	3944	-	-	-	3944	144	-	4088			105			-				68	14	-	10	-	197
	80	4783	-	-	-	4783	161	-	4944			116			-				57	14	-	12	-	199
	81	4783	-	-	-	4783	173	-	4956			118			-				55	14	-	12	-	199
1/ Exclusive of Military Personnel and Military Construction.																								

I/ Exclusive of Military Personnel and Military Construction.

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location		TOA (\$ in Thousands)										PERSONNEL (Man-Years)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		RDTE Funds					All Other Funds ^{1/}	Sub- Total	Mil. Pers.			Civil Service			Contractor			Mil. Pers.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Mgmt Bureau	Other Army	Other DOD	RDTE	Other			Total	RDTE	Other	Total	Paid From Army RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	In RDTE Work		Other	Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
FY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																</

1/ Exclusive of Military Personnel and Military Construction.

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location	FY	TOA (\$ in Thousands)										PERSONNEL (Man-Years)									
		TOA (\$ in Thousands)										PERSONNEL (Man-Years)									
		TOA (\$ in Thousands)										PERSONNEL (Man-Years)									
		TOA (\$ in Thousands)										PERSONNEL (Man-Years)									
Army Non-Industrial Fund Installations		TOA (\$ in Thousands)										PERSONNEL (Man-Years)									
		TOA (\$ in Thousands)										PERSONNEL (Man-Years)									
RDTE Funds	Mgmt Bureau	Other Army	Other DOD	All Other Funds ^{1/}	Sub-Total	Mil. Pers.	Civil Service	Paid From Army RDTE	Paid From Other RDTE	Total	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE
29.	Cold Regions Research & Engineering Laboratory, Hanover, New Hampshire	6496	18	244	1512	8270	230	189	7	8500	7	34	15	245	245	245	245	245	245	245	245
30.	Cold Regions Test Center, Ft Greely, Alaska	3775	392	-	100	4267	4325	22	-	8592	22	-	282	304	304	304	304	304	304	304	304
31.	Communications and Electronics Board, Ft Gordon, Georgia	707	-	-	-	707	951	31	-	1658	31	-	62	93	93	93	93	93	93	93	93
32.	Communications Research and Development Command, Ft Monmouth, New Jersey	28206	785	107	2081	31179	1877	668	28	33056	64	130	890	890	890	890	890	890	890	890	890
1/	Exclusive of Military Personnel and Military Construction.	28912	583	87	1907	31489	2653	1034	21	34142	59	198	1312	1312	1312	1312	1312	1312	1312	1312	1312
2/	Exclusive of Military Personnel and Military Construction.	28613	554	99	2277	31543	2848	1031	20	34391	69	198	1318	1318	1318	1318	1318	1318	1318	1318	1318

INSTALLATION ANALYSIS - IN-HOUSE

1/ Exclusive of Military Personnel and Military Construction

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location		TOA (\$ in Thousands)										PERSONNEL (Man-Years)																																																																																																																																																																																																																																																																																																																																																																																																																														
		RDTE Funds					All Other Funds ^{1/}					Mil. Pers.					Civil Service					Contractor					Mil. Pers.																																																																																																																																																																																																																																																																																																																																																																																																															
		Mgmt Bureau	Other Army	DOD	Sub-Total	Total	RDTE	Other	Total	Paid From Army	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE	Paid From Other RDTE

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location Army Non-Industrial Fund Installations		FY	TOA (\$ in Thousands)				PERSONNEL (Man-Years)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			RDTE Funds				All Other Funds ^{1/}	Sub-Total		Mil. Pers.		Civil Service				Contractor				Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
			Mgmt Bureau	Other Army	DOD	Other		RDTE	Other	Total	Paid From Army RDTE	Paid From Other RDTE	Paid From RDTE	Paid From Other RDTE	Paid From RDTE	Paid From Other RDTE	Paid From RDTE	Paid From Other RDTE	In Work																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
41.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

1/ Exclusive of Military Personnel and Military Construction

* Due to work required to be performed on OMA tasks in FY78, 6 MY were paid by OMA funds.

** Increase of over \$1 million from FY78 to FY79 was in allotted funds with dollar guidance furnished by OCE.

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location Army Non-Industrial Fund Installations		FY		TOA (\$ in Thousands)										PERSONNEL (Man-Years)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
				RDTE Funds				All		Mil. Pers.		Civil Service		Contractor		Mil. Pers.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
				Mgmt Bureau	Other Army	DOD	Other Funds	Sub- Total	RDTE	Other	Total	Paid From Army RDTE	Paid From Other RDTE	Paid From RDTE	Paid From RDTE	Other Funds	In RDTE Work	Other Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
44.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									</

1/ Exclusive of Military Personnel and Military Construction

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location		FY		TOA (\$ in Thousands)										PERSONNEL (Man-Years)											
				RDTE Funds				All Other Funds ^{1/}		Sub-Total		Mil. Pers.		Civil Service		Contractor		Mil. Pers.		Other		Total			
				Mgmt Bureau		Other Army		DOD						Paid From Army		Paid From Other RDTE		Paid From Other RDTE						Paid From Other RDTE	
				48.	78	58560	7620	5630	-	71810	491	-	72301	133	-	2906	-	32	-	3071					
					79	60265	8220	9760	-	78245	462	-	78707	133	-	2881	-	32	-	3046					
					80	63510	8300	8815	-	80625	429	-	81054	133	-	2890	-	32	-	3055					
					81	63510	7505	11015	-	82030	460	-	82490	133	-	2890	-	32	-	3055					
				49.	78	6115	162	5	65	6347	3865	-	10212	168	-	-	-	252	-	420					
					79	4016	29	5	110	4160	2209	-	6369	91	-	-	-	153	-	244					
					80	4256	29	5	110	4400	2050	-	6450	96	-	-	-	153	-	249					
					81	6608	29	5	110	6752	2200	-	8952	96	-	-	-	153	-	249					
				50.																					
					78	4431	-	-	-	4431	276	-	4707	114	-	-	-	18	-	132					
					79	5020	-	-	-	5020	260	-	5280	125	-	-	-	18	-	143					
					80	5276	-	-	-	5276	241	-	5517	125	-	-	-	18	-	143					
					(ARI)81	5548	-	-	-	5548	259	-	5807	125	-	-	-	18	-	143					

1/ Exclusive of Military Personnel and Military Construction

INSTALLATION ANALYSIS - IN-HOUSE

1/ Exclusive of Military Personnel and Military Construction

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location Army Non-In- dustrial Fund Installations		FY		TOA (\$ in Thousands)										PERSONNEL (Man-Years)					
				RDTE Funds			All Other Funds/		Sub- Total		Mil. Pers.		Civil Service		Contractor		Mil. Pers.		
													Paid	From	Paid	From	Paid	From	Paid	From
				Mgmt Bureau	Other Army	DOD	Total	Total	RDTE	Other	Total	Paid	From Army	Paid	From Other RDTE	Paid	From Other RDTE	In RDTE Work	Other	Total
55.																			
Mobility	78	15098	743	108	17657	33606	1166	-	-	34772	712	4	552	-	76	-	1344		
Equipment	79	19776	843	136	15085	35840	1097	-	-	36937	772	3	510	-	76	-	1361		
Research and	80	24915	-	-	10763	35678	1018	-	-	36696	1130	-	314	-	76	-	1520		
Development	81	25230	-	-	10764	35994	1093	-	-	37087	1160	-	314	-	76	-	1550		
Command, Ft Belvoir, Virginia																			
56.																			
Natick	78	14481	1257	93	1411	17242	1120	-	-	18362	589	-	-	-	73	-	662		
Research and	79	19934	1315	79	910	22238	1083	-	-	23321	826	-	-	-	75	-	901		
Development	80	20754	1395	84	970	23203	1340	-	-	24543	952	-	-	-	100	-	1052		
Command, Natick, Massachusetts	81	23458	1395	84	970	25907	1438	-	-	27345	976	-	-	-	100	-	1076		
57.																			
Night Vision	78	13036	95	379	5150	18660	429	-	-	19089	513	10	-	39	28	-	590		
and Electro-	79	13633	107	425	4761	18926	404	-	-	19330	454	10	-	39	28	-	531		
optics Labora-	80	16837	132	225	3601	20795	375	-	-	21170	523	10	-	39	28	-	600		
tory, Ft Belvoir, Virginia	81	16341	132	225	3601	20299	403	-	-	20702	537	10	-	39	28	-	614		

1/ Exclusive of Military Personnel and Military Construction

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

TOA (\$ in Thousands)										PERSONNEL (Man-Years)									
										Civil Service					Contractor				
										Paid		Paid			Paid		Paid		
										From		From			From		From		
										Army		Other			RDTE		RDTE		
										RDTE		RDTE			RDTE		RDTE		
										Other		Other			Other		Other		
										Total		Total			Total		Total		
										RDTE		RDTE			RDTE		RDTE		
										Mil. Pers.		Mil. Pers.			Mil. Pers.		Mil. Pers.		
										Other		Other			Other		Other		
										Sub-		Sub-			Sub-		Sub-		
										Total		Total			Total		Total		
										Funds ^{1/}		Funds ^{1/}			Funds ^{1/}		Funds ^{1/}		
										Other		Other			Other		Other		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										Mgmt		Mgmt			Mgmt		Mgmt		
										Bureau		Bureau			Bureau		Bureau		
										Army		Army			Army		Army		
										DOD		DOD			DOD		DOD		
										RDTE		RDTE			RDTE		RDTE		
										Other		Other			Other		Other		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		
										RDTE		RDTE			RDTE		RDTE		
										Funds		Funds			Funds		Funds		

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location Army Non-In- dustrial Fund Installations	FY	TOA (\$ in Thousands)				PERSONNEL (Man-Years)									
		RDTE Funds		All		Civil Service		Contractor		Mil. Pers.		Other		Total	
		Mgmt	Other	DOD	Other	Funds	Sub-	Funds	Sub-	Funds	Sub-	Funds	Sub-	Funds	Sub-
		Bureau	Army	Other	Funds	1/	Total	RDTE	Other	RDTE	Other	RDTE	Other	RDTE	Other
61.															
Standard-	78	17	-	-	-	-	17	31	-	48	-	-	-	2	-
ization Group,	79	17	-	-	-	-	17	29	-	46	-	-	-	2	-
Australia	80	17	-	-	-	-	17	27	-	44	-	-	-	2	-
	81	17	-	-	-	-	17	29	-	46	-	-	-	2	-
62.															
Standard-	78	39	-	-	-	-	39	31	-	70	-	-	-	2	-
ization Group,	79	39	-	-	-	-	39	29	-	68	-	-	-	2	-
Canada	80	39	-	-	-	-	39	27	-	66	-	-	-	2	-
	81	39	-	-	-	-	39	29	-	68	-	-	-	2	-
63.															
Standard-	78	810	-	-	-	-	810	92	-	902	21	-	-	6	-
ization Group,	79	747	-	-	-	-	747	87	-	834	21	-	-	6	-
United Kingdom	80	747	-	-	-	-	747	80	-	827	21	-	-	6	-
	81	747	-	-	-	-	747	86	-	833	21	-	-	6	-
64.															
Tank Auto-	78	25252	2978	293	11206	39729	1534	445	41708	255	70	5	224	100	29
motive	79	54559	2627	291	12300	69777	1444	419	71640	458	30	4	275	100	29
Research &	80	78764	1788	198	7650	88400	1340	389	90129	468	21	3	246	100	29
Development	81	88590	875	75	3000	92540	1438	417	94395	468	21	3	250	100	29
Command, Warren, Michigan															

1/ Exclusive of Military Personnel and Military Construction

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location		TOA (\$ in Thousands)										PERSONNEL (Man-Years)															
		RDTE Funds					All Other Funds ^{1/}					Civil Service					Contractor										
		Mgmt Bureau		Other Army		Other DOD	Other Funds ^{1/}		Sub-Total		RDTE		Other		Total	Paid From Army		Paid From Other RDTE		Paid From Other RDTE		Paid From Other RDTE		In Other		Total	
FY																											
65.																											
	78	12802	-	-	-	-	-	-	-	12802	1150	-	398	-	-	5	-	-	-	75	-	478					
	79	16745	-	-	-	-	-	-	-	16745	1083	-	360	-	-	5	-	-	-	75	-	440					
	80	16960	-	-	-	-	-	-	-	16960	1407	-	415	-	-	5	-	-	-	105	-	525					
	81	15167	-	-	-	-	-	-	-	15167	1510	-	426	-	-	5	-	-	-	105	-	536					
66.																											
	78	5239	-	-	-	2036	-	-	-	7275	491	-	163	-	-	-	-	-	32	-	195						
	79	5467	-	-	-	1430	-	-	-	6897	462	-	164	-	-	-	-	-	32	-	196						
	80	5446	-	-	-	1909	-	-	-	7355	429	-	164	-	-	-	-	-	32	-	196						
	81	5650	-	-	-	2020	-	-	-	7670	460	-	164	-	-	-	-	-	32	-	196						
67.																											
	78	2571	69	2	84	-	-	-	-	2726	1227	-	73	-	-	-	-	-	80	-	153						
	79	2574	138	2	57	-	-	-	-	2771	1155	-	73	-	-	-	-	-	80	-	153						
	80	2667	101	2	2	-	-	-	-	2772	1072	-	72	-	-	-	-	-	80	-	152						
	81	2435	96	2	2	-	-	-	-	2535	1151	-	72	-	-	-	-	-	80	-	152						
68.																											
	78	17128	306	-	203	-	-	-	-	17637	6764	-	421	-	-	-	-	-	441	-	862						
	79	18517	306	-	170	-	-	-	-	18993	7391	-	454	-	-	-	-	-	512	-	966						
	80	18133	306	-	170	-	-	-	-	18609	6472	-	421	-	-	-	-	-	483	-	904						
	81	19367	306	-	170	-	-	-	-	19843	6946	-	421	-	-	-	-	-	483	-	904						

1/ Exclusive of Military Personnel and Military Construction

Section 4 (Contd)

INSTALLATION ANALYSIS - IN-HOUSE

Installation and Location		TOA (\$ in Thousands)										PERSONNEL (Man-Years)																			
		RDTE Funds					All Other Funds					Sub- Total					Mil. Pers.					Civil Service					Contractor				
																						Paid					Paid				
		Mgmt Bureau	Other	Army	DOD		Funds	Other	Total	RDTE	Other	Total	RDTE	Other	Total	RDTE	Other	Total	RDTE	Other	Total	RDTE	Other	Total	RDTE	Other	Total				
FY																															

Reimbursable Program

DEPARTMENT OF THE ARMY
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY
ANALYSIS OF REIMBURSABLE PROGRAM
(\$ in Thousands)

Section 5

	FY 1978 ACTUAL	FY 1979 ESTIMATE	FY 1980 ESTIMATE
<u>Customer</u>			
Department of the Army	152,023	157,900	162,200
<u>Other Department of Defense Components</u>			
Department of the Navy	38,142	44,800	47,700
Department of the Air Force	46,572	48,100	48,300
US Marine Corps	34,122	35,100	35,800
Defense Advanced Research Projects Agency	19,513	23,700	23,800
Defense Mapping Agency	7,936	9,100	9,900
Defense Nuclear Agency	18,762	24,100	24,000
Other	10,987	20,200	8,300
Subtotal	176,034	205,100	197,800
<u>Activities Outside Department of Defense</u>			
National Security Agency	24,438	30,500	36,000
Department of Transportation	8,894	9,200	9,200
National Aeronautical and Space Administration	7,475	12,500	13,100
Department of Interior	769	600	500
Environmental Protection Agency	123	200	200
Energy Research and Development Administration	6,248	8,200	9,900
Federal Aviation Agency	25	300	300
Trust Funds	37,801	0	0
Other	1,255	1,100	1,000
Nonfederal Sources	3,127	4,400	4,800
Subtotal	90,155	67,000	75,000
TOTAL	418,212	430,000	435,000

Section 5 (Contd)

ANALYSIS OF REIMBURSABLE PROGRAM

DESCRIPTION OF REIMBURSABLE WORK

A large percentage of the Research, Development, Test, and Evaluation (RDTE) reimbursable program is for intra-Army (both inter/intra-appropriation) work or services performed under automatic reimbursement procedures. RDTE efforts also support requests received from other Federal and Nonfederal agencies on a reimbursable basis. Major areas of support include:

- a. Navy - 5" and 8" Guided Projectile Program; Mobility Analysis GATOR Seismic Testing; Seismic Techniques for Hostile Weapons Systems; Map Preparation; Solid Waste System; Sea Ice Imagery Analysis; High Angle Threat Working Group Support; 7600 Computer Support; Anti-Ship Missile Defense System; Study on Interactions of Aqueous Chlorine; Study Medical Evacuation Extreme Cold Climates; Test and Evaluate Clinic Gloves, Animal Support; Water Quality Development Projects; Heavy Metal Treatment Systems.
- b. Air Force - Test and Evaluation Command Testing Support; Advanced Ballistic Re-Entry System Support, Minute Man II/III Operational Testing; Rome Air Development Center/Ballistics Missile Defense Signature Development; Support Missile X (MX) Task C-1 Terrain Analysis Project, MX Component Tests, Grouting; Remote Sensor Analysis Work; Backfill Truss Enclosure; Multi-Path/Foliage Attenuation Studies.
- c. Marine Corps - GATOR Mine; High Survivability Test Vehicle GLLD Support; AN/TSC-86 Satellite Communications Terminal Fabrication, Installation and Testing; Target Activated Mine Systems.
- d. Defense Advanced Research Projects Agency - Mini Remotely Piloted Vehicle System; Laser Technology; Crystals and Films; Micron Photocathodes; Nuclear Weapons Effects; HIMAG-A Study; Design Feasibility Study; Advance Combat Vehicle Technology; Accelerated 75mm Gun Feeder and Ammunition.
- e. Defense Mapping Agency - Cathode Ray Tube Printhead Exploitation Software; Prototype Production System; Development of Ground Positioning Satellite Software; Photogrammetric Exploitation; Cartographic Exploitation; Geodetic and Geophysical Support; Data Base/Data Bank; Products and Services.
- f. Defense Nuclear Agency - Nuclear Weapons Effects; MRC 20KZ Launcher; Operational Test II AN/TPQ-36; Ground Motion Measures; Ground Motion Studies; Materiel Modeling; Grout Development; Road Cratering Tests; Wideband Equatorial; Support Nuclear Weapons Effect Technology Program; AKORA Operations.
- g. National Security Agency - Cryptologic Program.

Section 5 (Contd)

- h. Department of Transportation - Develop Math Model; Haul Road Study.
- i. National Aeronautical and Space Administration - Mars Water Analysis; Construction of Mobile Laser Facility; Trading Support for NASA.
- j. Department of Interior - Laser Distance Measuring System; Development of Mathematical Models; Exploration Drilling Sites; Tundra Recovery.
- k. Environmental Protection Agency - Technical Support Noise Abatement; Oil Movement and Ice Fog Study.
- l. Energy Research and Development Administration - Pipe Line Gas; HYBLA Gold; DIABLO HAWK; Grout Studies; Borehole Waste; Micro Fracturing; High Temperature Dust Energy; Enzymatic Hydrolysis of Cellulose to Glucose Sugar; Energy Analysis; Photo Voltage Program; Load Level Lead of Battery Flywheel Module Development; Evaluate Electric Hybrid Vehicle Components; Electric Vehicle Power State.

Federal Research
Contract Centers

DEPARTMENT OF THE ARMY
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY
FEDERAL CONTRACT RESEARCH CENTERS

Section 6

Federal Contract Research Centers (FCRCs) are those organizations primarily engaged in providing specialized technical and scientific effort necessary to supplement that available in the Army. The centers listed are those sponsored by the Department of Defense which provide technical and management services in the management of the Army's programs. These centers provide independent, specialized, technical and scientific capabilities to supplement that available within the Department of the Army.

FCRCs have been established to permit more organizational flexibility, and greater availability of technical and scientific personnel. These research centers possess unique skills and capabilities resulting from the development of highly specialized professional staff intimately acquainted with the many facets of the Army's mission. This capability results from long association and practical experience with the Army. The in-depth background provides the Army with a research capability that cannot be immediately obtained elsewhere. Long association with the Department of Defense enables these centers to render quick response technical advisory service as well as to perform detailed research and analysis. This long association has tailored these research centers to be compatible with Army interests, procedures and operational requirements.

While the Army no longer sponsors an FCRC it will be necessary to continue research and development effort at FCRCs sponsored by the Department of Defense and the other services. These research and development contracts provide timely and innovative products and techniques appropriate to current and long-range Army missions and plans.

The requested FY 1980 FCRC requirements reflect an increase of \$2.6 million when comparing FY 1980 to FY 1979.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

The following summary identifies the estimated work, excluding subcontract effort, to be placed with each Federal Contract Research Center (FCRC) from the Research, Development, Test, and Evaluation, Army appropriation and from the other Army appropriations.

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT		FY 1978 ACTUAL	FY 1979 ESTIMATE	FY 1980 ESTIMATE	FY 1981 ESTIMATE
AEROSPACE CORPORATION					
Research, Development, Test, and Evaluation, Army					
6.21.05.A	Materials	-	-	100	-
6.33.04.A	Ballistic Missile Defense Advanced Technology Center	145	250	450	500
6.33.08.A	Ballistic Missile Defense Systems Technology	910 *	993 *	1,043 *	1,105 *
6.33.14.A	High Energy Laser Components	12	70	70	80
6.37.30.A	Tactical Surveillance System	-	-	-	-
6.37.45.A	Tactical Electronic Surveillance Systems	-	-	-	-
6.47.40.A	Tactical Surveillance System	-	-	-	-
6.47.45.A	Tactical Electronic Surveillance Systems	-	-	-	-
Total RDTE, Army		801	2,114	2,366	2,059
Total RDTE, Army Included in Air Force Ceiling		910	993	1,043	1,105
Total Aerospace Corporation		1,711	3,107	3,409	3,164

* Program funded by Army but supported with Air Force ceiling.

Section 6 (Cont'd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

AEROSPACE CORPORATION (Continued)

Remarks: The expertise and facilities of Aerospace Corporation are required to support the Army as follows:

1. Materials. Aerospace Corporation efforts are required for technical support to US Army Materials & Mechanics Research Center (AMMRC) in the area of advanced gear materials, including the newly developed X-2 steel, to evaluate suitability of X-2 steel for use in helicopters. Work on the gear material must be completed before the CH-47 Mod program can go into production in FY 1980 and is also necessary for the Advanced Attack Helicopter (AAH) and Blackhawk programs.
2. Ballistic Missile Defense Advanced Technology Center (BMDATC). Aerospace Corporation provides interface and planning support for Joint Army/Air Force research and development efforts mutually beneficial to the Ballistic Missile Defense/Strategic Defense Force missions. During FY 1980, this effort will address the interface between BMD missions and Air Force missions with the objective of providing a set of requirements mutually beneficial to both classes of missions. Support will also be provided to the Space and Missile System Organization (SAMSO) in procurement and integration of secondary payloads. Similar support has been provided in the past for other BMDATC programs including earlier RMP phases and the Special Target Program phase.
3. Ballistic Missile Defense Systems Technology. As directed by Department of Defense (DOD), the Space and Missile System Organization (SAMSO) of the Air Force System Command (AFSC) is the procuring agency for the Systems Technology Reentry Experiments (STREP) targets. SAMSO uses Aerospace Corporation for technical support in this effort. The justification and man-year requirements for Aerospace personnel are established by SAMSO based on projected STREP target requirements. The technical support for STREP includes preparation of contractual documents, proposal evaluation, program planning, in-house studies, and providing technical direction to SAMSO contractors. The work to be performed by Aerospace in specific fiscal years is as follows:

- a. In FY 1978, Aerospace supported SAMSO in the development of procurement packages, evaluation of proposals, and contractor selection for the development of STREP payloads. They will also provide payload interface support for MINUTEMAN and TITAN II. Further, Aerospace will support the Ballistic Missile Defense Systems Command's contractors in the areas of mission planning and mission design.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

AEROSPACE CORPORATION (Continued)

- b. In FY 1979, Aerospace efforts are required to continue the payload procurement contractor technical direction, to provide mission planning/mission design, and to develop a test schedule with supporting range documentation. Space and Missile System Organization (SAMSO)/Aerospace will also support three MINUTEMAN launches in FY 1979 by providing technical analyses and scheduling.
- c. In FY 1980, Aerospace efforts will be required for mission planning, mission design, and to develop a test schedule with supporting range documentation. They will also support a MINUTEMAN and TITAN II by providing payload to booster technical analyses and scheduling.
- d. In FY 1981, Aerospace efforts will be required for support of SAMSO in the development of procurement packages, evaluation of proposals, and contractor selection for the development of Homing Overlay Experiment (HOE) payloads. HOE is the second phase of the Systems Technology Reentry Experiments (STREP). Further, Aerospace will support the Ballistic Missile Defense Systems Command's contractors in the areas of mission planning and mission design.
4. High Energy Laser Components. Aerospace efforts are required in the following areas:
 - a. Provision of laser physics, optical, thermal and stress analysis consultation for the Modular Army Demonstration System (MADS) and Uncooled Nozzle Array Technology (UNAT) Programs both in the form of independent analysis and participation in contract review.
 - b. Investigation and modeling the kinetic process involved in the D₂-F₂ reaction lasers.
 - c. Investigation of approaches for design and fabrication of large area, high current density electron beam gun.
5. Tactical Surveillance Systems/Tactical Electronic Surveillance Systems. Aerospace efforts are required to support these US Army Space Program Office (ASRO) programs in FY 1980 as follows:

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

AEROSPACE CORPORATION (Continued)

a. General System Support. Studies, both conceptual and hardware oriented, will be identified, scoped and performed according to established milestones. Aerospace will help develop a comprehensive system concept defining the functions, equipment, communications, personnel and interfaces necessary to integrate space system supply into ground force operations. Long range planning and briefing support, both personnel and material, will be provided. Aerospace will examine long-range planning associated with systems of interest and advise as to hardware and software modifications and/or additions which, if implemented, would increase support to the Army Tactical program offices in areas of existing system operations, emerging technology developments and new system studies.

b. General Systems Engineering/Technical Direction (GSE/TD) support to the US Army Space Program Office (ASRO) in the execution of systems evaluation and development and other contractor efforts to be defined. General Systems Engineering will encompass those activities directed toward ensuring that the scope and objectives of contract efforts are accomplished in an economical and timely manner and are in consonance with overall Army objectives. Technical direction will address the process by which contractors' technical effort is modified, realigned, or redirected by the Army based principally on recommendations generated by Aerospace as a result of general systems engineering analysis, reviews and exchange of information with the contractor. GSE/TD support and technical support is required for:

(1) Development of the Tactical Defense Dissemination System (TDDS). This includes GSE/TD support and technical support in the advanced development of critical components, in procuring a model for demonstration in FY 1979, and for GSE/TD of contracts in the initiation of engineering development of the TDDS to enter production in FY 1983.

(2) —

(3) —

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

AEROSPACE CORPORATION (Continued)

c. Aerospace efforts will support the US Army Space Program Office (Army) efforts to exercise simulation programs. These simulations will realistically model and qualify and quantify representative performance for several systems. The types of support potentially available to the tactical commander and the effectiveness of that support will be determined based on various assumptions. Timeliness factors will also be included in the simulations to properly account for system processing/communications timeline considerations. The simulation programs will allow the Army to use the programs as training aids for Army personnel and field organization.

d. Aerospace will also provide technical support and perform system studies in support of Army field evaluations of specific interim hardware and software fielded in FY 1979/1980. Detailed test planning and post-test evaluation support will be provided to ensure that all Army objectives are achievable based upon the units deployed in the field and lated space system employment is accomplished in a realistic and technically accurate manner.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FY 1978
ACTUAL

FY 1979
ESTIMATE

FY 1980
ESTIMATE

FY 1981
ESTIMATE

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

LINCOLN LABORATORY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Research, Development, Test, and Evaluation, Army

6.27.26.A Army Support to Defense Advanced Research Project Agency (DARPA) HOWLS.	1,500 *	1,800 *	1,500 *	-
6.33.04.A Ballistic Missile Defense Advanced Technology Program.	7,479	8,114	8,560	9,100
6.33.08.A Ballistic Missile Defense Systems Technology	145	300	300	300
6.53.01.A Kwajalein Missile Range (KMR).	3,250	3,335	3,400	3,470
6.58.04.A White Sands Missile Range (WSMR)	668	850	1,057	1,462
Total RDTE, Army	11,542	12,599	13,317	14,330
Total RDTE, Army Included in DARPA Ceiling	1,500	1,800	1,500	-
Total Lincoln Laboratory, Massachusetts Institute of Technology	13,042	14,399	14,817	14,330
Subcontract effort excluded from this amount.	11,974	12,866	13,500	14,500

* Advanced Research Project Agency (ARPA) ceiling.

Remarks: Work to be performed at Lincoln Laboratories is as follows:

1. Army Support to DARPA HOWLS. Army funded portion of Joint ARPA/Army effort at Lincoln Laboratories supports the following tasks:
 - a. Define the performance and utility of a netted battlefield radar system.
 - b. Conduct studies, investigations, measurements and experiments leading to new techniques for detecting and accurately locating hostile artillery, mortars, and rockets in both the firing and non-firing modes (HOWLS).

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

LINCOLN LABORATORY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY (Continued)

2. Ballistic Missile Defense Advanced Technology Program. Work is being performed by Lincoln Laboratory in the following areas:

a. Discrimination Technology: Discrimination technology effort includes work in reentry discrimination, bulk filtering, bulk discrimination, exoatmospheric designation and discrimination engineering and radar data analysis and interpretation. Discrimination techniques utilizing millimeter wavelength radars, passive optics and laser radars will also be evaluated.

b. Radar Technology: Radar technology effort includes work in millimeter-wave components, laser components, large bandwidth signal processing, radar signal processing, antenna technology, surface wave technology, array development, and hardened components.

c. Optics Technology: Optics technology effort includes: Operation of the Army Optical Station at Kwajalein Missile Range, which includes two passive optical sensors and one laser sensor, obtaining signature measurements on targets-of-opportunity and conducting handover experiments between these sensors and the Kiernan Reentry Measurements Site radars; and investigation and development of adaptive optics technology for laser application.

d. Terminal and Midcourse Defense Technology: Effort includes continuation of terminal and midcourse defense technology evaluation and construct requirements integration for advanced terminal concepts, non-nuclear kill, and high endo and exo regimes. Other requirements to be addressed include nuclear environment data association, trilateration tracking, probe/D3 functions and handover, battle management, engagement logic, and new technology assessment for Ballistic Missile Defense applications.

3. Ballistic Missile Defense Systems Technology.

a. Lincoln Laboratory efforts are required to provide the Homing Overlay Experiment with supplemental and independent assistance in the general field of optical discrimination and other miscellaneous tasks in the systems analysis area.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

LINCOLN LABORATORY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY (Continued)

- (1) Specifically Lincoln Laboratory will conduct a review of current infrared (IR) signature models and of the ways in which they are applied to the Overlay concept. Features of the models which appear to be critical with respect to discrimination, and which offer opportunity for improvement will be identified.
- (2) They will concentrate on characteristics of objects of interest in the context of the Overlay, and on geometric and natural environmental effects, using sensor models developed by others, as appropriate for the Overlay.
- (3) On a highly selective basis, consistent with the size of the effort, improvements to IR signature models will be made. These IR signature models will be used in an attempt to see how differences in signatures arise from the physics involved in constructing the models and to help provide a measure of effectiveness of discrimination algorithms.
- (4) They will examine several methods of performing kill assessment, including radar and optical signature trajectory deviations, and miss distance measurement. Impact point prediction accuracy available with signal and multiple sensors will be examined.

b. Lincoln Laboratory was selected for this effort because it is considered best qualified to provide the required assistance. The impact on the program would be the necessity to select a second choice contractor.

4. Kwajalein Missile Range (KMR).

- a. The Kiernan Reentry Measurements Site (KREMS) radars were developed by Lincoln Laboratory under Advanced Research Projects Agency (ARPA) sponsorship, and by direction of the Under Secretary of Defense for Research and Engineering, transferred to the Kwajalein Missile Range Directorate (KMRD) of the Ballistic Missile Defense Systems Command (BMDSOCCOM) in 1968 to support the National Range mission.
- b. Lincoln Laboratory serves as Scientific Director of KREMS at KMR, and they are considered predominant experts for this particular task. They provide the technical management of the overall KREMS instrumentation system which includes three very unique and complex radar sensors and their associated display, control, and recording equipments in support of mission operations. Additionally, they perform the offsite mission test planning, radar systems engineering, and data reduction and reporting.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

LINCOLN LABORATORY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY (Continued)

c. Their overall efforts are pursuant to the objective of providing an integrated operation with multiple sensors whose total spectrum of capabilities will allow the collection of data for both strategic offensive and defensive weapon system development and which will function as an extremely flexible test bed for experiments on Advanced Ballistic Missile system techniques. The instrumentation system at the Kiernan Reentry Measurements Site is a continually evolving one due to the emphasis on using, in real time, the capabilities of the individual sensors to maximize the total effectiveness for data collection.

d. Kwajalein Missile Range does not have the in-house capability to perform this effort. If the effort were sought from other contractual sources, the expertise gained at Lincoln Laboratory and nurtured during the last 12 years at Government expense would be sacrificed and an unacceptable degradation in the quality and efficiency of support provided testing programs would occur.

5. White Sands Missile Range (WSMR). Lincoln Laboratory efforts are required to provide support required to establish the Tri-Service High Energy Laser (HEL) test capability at White Sands Missile Range. Work to be performed is in the areas of:

- a. Design of a beam diagnostic system.
- b. Definition of HEL data acquisition and analysis systems.
- c. Coordination of test requirements between Tri-Service users and WSMR.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT	FY 1978 ACTUAL	FY 1979 ESTIMATE	FY 1980 ESTIMATE	FY 1981 ESTIMATE
<u>MITRE CORPORATION</u>				
Research, Development, Test, and Evaluation, Army				
3.31.45.A USAREUR Command and Control Information System (CCIS)	583	275	650	-
3.31.45.A Central Army Study Group (CENTAG) CCIS Study	321 **	300 *	300	-
6.11.02.A Army Data Distribution System (ADDS) Network	-	-	250	250
6.27.01.A Communications Electronics (TIDS)	170	180	191	-
6.27.33.A Mobility Equipment Technology (Aerosols)	60	-	-	-
6.37.04.A Unattended Ground Sensors (REMBASS)	48	100	50	20
6.37.07.A Communications Development	-	600 *	550	580
6.47.45.A TAC EWI C&C System (BETA)	-	1,085	3,146	3,146
6.47.79.A JINTACCS	1,435	1,350	1,600	2,020
6.57.13.A Battlefield Systems Integration	-	-	-	-
Total RTE, Army	2,712	4,140	7,137	6,216

* Program funded by Army but supported with Air Force ceiling.

** Includes \$276 thousand Air Force ceiling, \$25 thousand DARPA ceiling, \$20 thousand USDRE ceiling.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT		FY 1978 ACTUAL	FY 1979 ESTIMATE	FY 1980 ESTIMATE	FY 1981 ESTIMATE
MITRE CORPORATION (Continued)					
Operations and Maintenance, Army					
208015	Project AVID GUARDIAN	74	-	-	-
395701	US Army Communications Command	480 **	472	794	233
393145	EUCOM C3	566 *	595	525	-
	ANMCC Improvement Plan	190 *	-	-	-
	TRADOC Systems Management Handbook	120	-	-	-
	Total Operations and Maintenance, Army	1,430	1,067	1,319	233
	Total Army	3,005	4,307	8,456	6,449
	Total Army Included in Other Ceiling	1,137	900	-	-
	Total MITRE Corporation	4,142	5,207	8,456	6,449

* Program funded by Army but supported with Air Force ceiling.

** Includes \$60 thousand Navy ceiling.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

MITRE CORPORATION (Continued)

Remarks: MITRE Corporation technical support to the Army is required as follows:

1. United States Army Europe (USAREUR) Command Control Information System (CCIS) Study. MITRE will provide systems engineering support to the USAREUR CCIS project office in the analysis of requirements leading to the development and implementation of the USAREUR CCIS. MITRE's prior years effort on this study lends continuity of effort and efficiency as opposed to an in-house effort or another contractor.
2. Central Army Study Group (CENTAG) CCIS Study. MITRE will provide systems engineering support to the CCIS project office in the development of requirements for improvements to the current information systems supporting CENTAG. Continuity of effort and efficiency are best achieved utilizing sources with the requisite background and history of requirements. MITRE's past work will speed this effort as opposed to in-house resources or another contractor.
3. Army Data Distribution System (ADDS) Network Research. MITRE efforts are required to prepare a Network Management Problem Definition Document, a Network Management Research Program Plan, and conduct actual research into the hardware and software aspects of digital network management and control.

a. In order to attack the network management problem, it must first be defined to the extent that bounds can be placed on the problem which will permit a feasible approach to a solution. The data network to be managed must be defined in terms of required data throughput, geographical coverage, user participation, subscriber to subscriber routing, message accountability and control hierarchy. MITRE will undertake this definition as a first priority.

b. Once the problem has been defined, MITRE will develop a research program plan for the conduct of the effort directed towards investigating the network management problem. This program will emphasize operationally-oriented analysis and evaluation of hardware and software capabilities which would contribute to feasible and effective digital data distribution, network control, and management in the tactical Army environment.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

MITRE CORPORATION (Continued)

c. Upon approval of the program plan by the Communications Research and Development Command (CORADCOM), MITRE will implement the plan with emphasis on the following general areas:

- (1) Create distributed routing/flow control algorithms for Army tactical environment.
- (2) Determine the required frequency of automatic network reconfiguration actions in mobile tactical scenario.
- (3) Analyze the performance of different channel access modes (e.g., pure ALOHA, carrier sense, reservation, etc.) and of single versus multiple channel operation (including various data rates), in tactical mobile operations in typical terrain.
- (4) Determine the relative merits of HDQ-BY-HOP acknowledgment and END-TO-END acknowledgment, in terms of delay, throughput, reliability and buffer size requirement.
- (5) Quantify the tradeoff between increased computational capability of network elements and decreased overhead traffic levels between network elements.
- (6) Determine desirability of priority order defined over different classes of messages.
- (7) Examine the implications of the population of network subscribers having different bit rates.
- (8) Determine the effects of changing network topology (terminal density, connectivity, spatial distribution) on network performance and survivability.
- (9) Create net entry/initialization procedure.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(§ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

MITRE CORPORATION (Continued)

- (10) Identify limitations on network performance caused by hardware (e.g., time delay for error sensing).
- (11) Analyze the internet communication/coordination problem.
- (12) Analyze communications processing requirements for terminals used by upper echelon commanders, due to high volume network traffic patterns in vicinity of such terminals.
- (13) Examine the effects of various mixes of broadcast and discretely addressed traffic on network performance.

4. Communications Electronics.

a. Communications Research and Development Command (CORADCOM), acting for Materiel Development and Readiness Command (DARCOM) and in conjunction with Training and Doctrine Command (TRADOC), is presently involved in a program to refine the specifications and establish the potential for a digital data communications system for Army use on the battlefield. Specific applications include the transfer of digital data from sensors to command center computers and among Division and Corps command center computers to demonstrate operational concepts expected to be implemented in the mid to late 1980's. This project was initiated in order to determine where certain critical operational needs, difficult to satisfy by the classic point-to-point network, could be served more efficiently by an all-digital network.

b. The main thrust of MITRE's efforts in FY 1979 and FY 1980 will be the preparation of specific plans for the utilization and evaluation of the corps level tested at Fort Bragg including a master schedule. MITRE personnel will work closely with CORADCOM, Directorate for Battlefield Systems Integration (DBSI), XVIII Airborne and Defense Advanced Research Project Agency (DARPA) representatives in the preparation of these documents. In addition, MITRE will determine a feasible method of integrating associated developmental testing (e.g., HELBAT, Army Air Defense Data) with the corps level experiment.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

MITRE CORPORATION (Continued)

c. MITRE has been assisting the Communications Research and Development Command (CORADCOM) by providing assessments of the characteristics and capabilities of various hardware candidates for the Army Data Distribution System (ADDS) test-bed radios, proposing ways to examine critical applications in the experimental test-bed, and defining the characteristics of the experimental test-bed itself. As a collateral task, MITRE prepared a baseline draft ADDS generic system description and participated in meetings with other Army offices and Department of Defense organizations to assist CORADCOM in defining this test-bed activity. MITRE participated with CORADCOM in the working group activities with the Defense Advanced Research Project Agency, Combined Arms Combat Development Activity, US Army Signal Center and Fort Gordon and XVIII Airborne Corps which resulted in the establishment of an ADDS experimental test activity to investigate ADDS concepts at XVIII Airborne Corps.

d. The CORADCOM ADDS experimental project continues to evolve rapidly and is likely to undergo additional modifications on short notice. Quick response to changing directions is an important requirement. MITRE -- with a small group currently on the project and a pool of personnel with recent experience on related US Army Europe (USAREUR), Directorate for Battlefield Systems Integration (DBSI), AUTODIN II, and World-Wide Military Command and Control Systems projects -- is in a position to provide responsive support to CORADCOM.

e. On this project, which involves many agencies and constantly changing personnel, continuity of effort is at a high premium. The US Army Signal Center and school recently assigned as the proponent agency and CORADCOM, as the implementation agency, will have a contingent of new people on the project. Thus, the MITRE group will represent an element of continuity through the next several stages of the design cycle.

f. The ADDS corps level experiment will be operational through the early 1980's thus, in order to avoid obsolescence at the start, the latest state-of-the-art technology must be used to assure compact design and to allow a margin of growth. MITRE is unique in the knowledge and ability to utilize such information.

5. Unattended Ground Sensors. Funds are required during FY 1979 and FY 1980 for continuation of support commenced by the MITRE Corporation in FY 1972. MITRE will continue to provide technical support of engineering development efforts to insure that design features and end items are responsive to system requirements in a cost effective manner. Due to familiarity with the

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

MITRE CORPORATION (Cont inued)

Remotely Monitored Battlefield Sensor System (REMBASS) program over the past seven years (FY 1972-1978), no alternative in-house or contractor capabilities can be substituted for MITRE technical support during FY 1979 and FY 1980. Availability of MITRE efforts for systems engineering support during these years will be particularly important to the REMBASS program.

6. Communications Development. MITRE efforts are required for support of the Deputy Program Manager, Army, in the review, coordination, and generation of Army user-oriented requirements and operational deployment plans and to assure that such plans are in consonance with overall concepts of operations for the Joint Tactical Information Distribution System (JTIDS); and to analyze the applicability of various net management techniques for specific scenarios of Army deployment and use of JTIDS terminals. Emphasis will be placed on ground relay concepts that retain the broadcast nature of JTIDS to the maximum extent feasible. MITRE support is also required in order to insure Army viewpoints and interests are reflected in the Test and Evaluation Master Plan (TEMP); in the development of the test annex for the Class 3 specification; and in preparing plans for evaluation of JTIDS in Army-unique applications.

7. Tactical Electronic Warfare and Intelligence Command and Control System (BETA).

a. MITRE provides objective technical review of designs, hardware, and software being proposed or implemented by the BETA prime contractor and its sub-contractors. In addition, MITRE assists the BETA Joint Program Office in the evaluation and selection of pertinent software, which may have been developed by government or industry, for integration into BETA. Since the potential future market for the BETA technology is very large, it is most unlikely that firms possessing the necessary skills would forego future markets to provide the requisite support to BETA without conflict of interest.

b. The BETA Testbed will employ commercial state-of-the-art equipments/techniques for graphic displays which can pass TEMPEST and will experiment with state-of-the-art concepts, design, and software for sensor data correlation, fusion, and interpretation. This will require selection and integration of equipments and software as well as development of designs and software. MITRE has a uniquely pertinent knowledge base due to its long term participation in Air Force C3I system design and development and its recent work concerning battlefield systems and sensors for the Army Directorate of Battlefield Systems Engineering.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

MITRE CORPORATION (Cont inued)

c. MITRE is uniquely qualified to provide this support because of their previous participation in the development of the concepts and technical requirements for the BETA Testbed, in the technical review of proposals and in the ongoing systems engineering and functional analysis efforts necessary to guide the development of the testbed. The combination of MITRE's experience, gained during this process, and their objectivity as a Federal Contract Research Center (FCRC) is particularly critical because of the extensive coordination that must be accomplished with operational and technical agencies under the duress of an extremely tight program schedule.

8. Joint Interoperability of Tactical and Control Systems (JINTACCS). The Center for Systems Engineering and Integration (CENSEI), as organizational element of the Communications Research and Development Command (CORADDOOM), Fort Monmouth, New Jersey has the function to plan for and implement systems engineering for command, control, communications and intelligence interoperability on the battlefield. This function includes the Army portion of the JINTACCS program. Army Compatibility and Interface (C&I) testing with the Joint Interface Test Force (JITF) is scheduled to start in July 1979 and continue through the mid 1980's. To prepare for this effort, the Army must accelerate its action to develop pertinent planning and technical details. Augmentation of the current organization by additional government table of distribution and allowances (TDA) authorizations is expected; however, arrival of this manpower will not be timely in meeting the stated schedules. Support by MITRE is critical in fulfilling Army JINTACCS responsibilities.

9. Battlefield Systems Integration (BSI).

a. The MITRE Corporation battlefield system integration program, begun in FY 1976, consists of creative, interdisciplinary design work treating the Army in the field as a total and cohesive system, integrated so that combat subsystems such as ground forces, organic aerial units and appropriate components of the Tactical Air Command of the US Air Force work in a common framework, with each element configured to maximize total system capabilities. There are two complimentary thrusts of activity carried on simultaneously.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(§ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

MITRE CORPORATION (Continued)

(1) The first is the architecture or design of an overall battlefield systems concept. The basis for the design is the conviction that technology is now at hand to permit battlefield data collected by any sensor to be communicated in real time to command and control centers where it is instantaneously sorted, collated, displayed and transmitted digitally to maneuver or fire units who will act on it. Such a master design to guide the Army's research and development (R&D) effort will optimize weapon, C³ and sensor development. New developments that are only marginally effective when viewed in the context of an integrated battlefield system can be screened out. A synergistic effect will be achieved in the R&D effort by permitting new equipment to realize its full technological potential through interoperability with communications, command and control, target acquisition or other weapons operating in the system.

(2) A second line of effort focuses on near-term improvements to the Army's combat capability by optimizing tactical subsystems such as field artillery, night combat, air defense and aviation. Each of these functional subsystems have shortfalls that could be corrected by a searching battlefield systems analysis. As high payoff areas for short term correction are positively identified, teams of engineers and analysts will develop fully documented program recommendations to give higher priority to certain lines, modify or terminate others, provide guidance for product improvements and input to research and technology development.

b. The MITRE Corporation is considered to be qualified to support the Army's pioneer systems architecture and design program for several reasons. MITRE has an accepted reputation for quality technical work in target acquisition, telecommunications and data processing. MITRE has extensive experience in comprehensive battlefield command and control systems, a level of technical sophistication and tactical application that has never been attempted in the Army before. MITRE's experience has been gained in such projects as Joint Tactical Information Distribution System, World-Wide Military Command and Control Systems, and extensive work for the Air Force in tactical command and control systems. Interoperability of tactical Army-Air Force systems is considered vital and MITRE will contribute synergistically. Finally, MITRE has on board the requisite scientific talent, both in terms of numbers and experience to participate in an Army Battlefield Systems Integration Program without undue delay for recruiting or education in defense systems.

Section 6 (Cont'd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

MITRE CORPORATION (Continued)

10. US Army Communications Command.

- a. Since FY 1973, MITRE has provided systems engineering support to the Army Base Information Transfer System (ARBITS) resulting in the feasibility of providing integrated multimedia interactive Communications-Electronics (C-E) systems to meet Army needs, a system design of testbed facilities, a definition of test scope, evaluation criteria resource requirements, a Subsystem Project Plan (S/PP) for Ft Bliss, Texas, an applications document, and a cost benefit/risk analysis.
- b. In FY 1977, MITRE performed program definition support, technical risk assessment of potential testbeds, testbed system engineering, costed and designed a coaxial cable network for the new Walter Reed Army Medical Center (WRAMC), and published an S/PP for WRAMC and Aberdeen Proving Ground (APG), Maryland mini-testbeds (approved by OSD, on 4 August 1977).
- c. Results were used in FY 1978 to begin system specifications for the two testbeds (WRAMC and APG). MITRE also provided technical support to update the S/PP, prepared additional program management documentation, and detailed design applications for the mini-testbeds, began the first phase implementation of the testbed at WRAMC, and published a plan for advanced communications systems in medical treatment facilities.
- d. In FY 1979, MITRE will perform system engineering technical support to the Army for testbed implementation at APG, provide general and specific engineering support for the technical performance of the testbed systems within the parameters established by the Army, technical initiative required to complete systems procurement for testbed implementations, assisted in preparing requests for proposals, evaluation criteria, source selection team support to WRAMC in negotiations and review of contractors design efforts for hardware and software. MITRE will also provide assistance to Army agencies and commands identified with approval, funding, procurement, installation, operations, tests and evaluations of the testbeds.
- e. In FY 1980, MITRE will complete installation of the testbed facilities at APG to include extending access to testbed users not yet served by the ARBITS cable system, test and evaluate the cable system, provide data bus communications on the cable system to testbed users, and initiate formal test and evaluation of data bus communications. At WRAMC, MITRE will continue providing technical support in interfacing the Hospital Information Systems (HIS) onto the ARBITS cable; continue the design,

Section 6 (Cont'd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(§ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT

MITRE CORPORATION (Continued)

installation, testing and monitoring of the Technical Control/Performance Monitoring System supporting the cable begun in FY 1979; continue technical support for conversion of the Interim Hospital Logistics System and the Interim Food Service System from conventional telephone communications to the Army Base Information Transfer System (ARBITTS) cable; provide technical support in interfacing automatic data processing medical systems onto the cable and with the Hospital Information Systems; provide technical support for cable extensions to other buildings on Walter Reed Army Medical Center installation and interfacing Shared Word Processing on the cable; continue to specify changes to and provide technical assistance in upgrading the hospital information transfer system to take advantage of new technology in the bus interface units on the system and broadband multimode communication techniques.

f. Knowledge of state-of-the-art in all fields related to user requirements, broadband multimode transmission systems and data bus techniques is essential to this program. Continuity of effort to provide the required degree of design coherency and consistency cannot be obtained as effectively in any other way. Transfer of information developed in previous years by MITRE into system procurement specifications will require fewer man years and less time than any other alternative. It is important to the Army that objectivity be retained in design, selection of off-the-shelf hardware, choice of hardware from competing contractors, selection of hardware as influenced by possible subsequent production opportunities, preparation of specifications, etc. MITRE access to proprietary information and industry proposals are keys to the best technology and hardware.

11. United States European Command (EUCOM) C3. MITRE will provide technical support to the US Army Communications Command in finalizing design options for the EUCOM Alternate Combat Operations Center (AOCOC) and develop a transition plan based on scheduled lead times required for equipment development and procurement. The FY 1977 and FY 1978 efforts were conducted by MITRE-in the interest of continuity of effort and efficiency, MITRE's past work will speed completion of this initiative. There are no in-house resources to accomplish this task.

12. Alternate National Military Command Center (ANMCC) Improvement Program (ANIP). This program is being held in abeyance pending a decision by the Office of the Secretary of Defense on its continuation.

Section 6 (Contd)

FEDERAL CONTRACT RESEARCH CENTERS

SUMMARY BY APPROPRIATION AND PROGRAM ELEMENT
(\$ in Thousands)

FEDERAL CONTRACT RESEARCH CENTER/APPROPRIATION/PROGRAM ELEMENT	FY 1978 ACTUAL	FY 1979 ESTIMATE	FY 1980 ESTIMATE	FY 1981 ESTIMATE
TOTAL PROGRAM SUMMARY BY APPROPRIATION				
Research, Development, Test, and Evaluation	14,734	17,953	22,820	22,605
Operations and Maintenance.	614	1,067	1,319	233
Total Federal Contract Research Center Requirement.	15,348	19,020	24,139	22,838
Subcontract effort excluded from this amount.	11,974	12,866	13,500	14,500

Improvements Government
Owned Facilities

DEPARTMENT OF THE ARMY
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY
MAJOR IMPROVEMENTS TO AND CONSTRUCTION OF GOVERNMENT-OWNED
FACILITIES FUNDED BY RDTE, ARMY APPROPRIATION

Section 7

PART 1. UTILIZATION OF SECTION 2353, TITLE 10 AUTHORITY

Specialized R&D facilities determined to be necessary for the performance of a contract for a Military Department for research and development, may be constructed by or furnished to the contractor and funded from appropriations available for research, development, test, and evaluation. The Congress enacted this legislation, now 10 USC 2353, in 1956. This policy is executed through DOD Directive 4275.5. Under this policy, construction of R&D projects for contractors up to \$500,000 is normally approved by the Major Command concerned; the Service Secretary or such delegate as he may authorize approves projects up to \$1,000,000; and the Under Secretary of Defense for Research and Engineering approves projects over \$1,000,000. The table below provides a summary listing of all such projects accomplished in FY 1978 and planned in FY 1979, FY 1980 and FY 1981.

Facility/Equipment	RDTE Project Number	Contractor	Location	Total Obligational Authority (Thousands of Dollars)		
				FY 1978	FY 1979	FY 1980 FY 1981

SECTION I

Projects Accomplished or Underway

Negative

SECTION II

Projects Planned or Projected

Negative

Section 7 (Contd)

MAJOR IMPROVEMENTS TO AND CONSTRUCTION OF GOVERNMENT-OWNED
FACILITIES FUNDED BY RDTE, ARMY APPROPRIATION

PART 2. UTILIZATION OF RDTE APPROPRIATION FOR FACILITIES AT GOVERNMENT-OWNED/GOVERNMENT-OPERATED INSTALLATIONS

Chapter 251 (which was approved by the GAO as DOD Instruction 7220.5) provides that RDTE appropriations may finance the development, design, purchase and installation (including directly related foundations, shielding, environmental control, weather protection, structural adjustments, utilities and access) of equipment or instrumentation required for research, development, test, and evaluation activities. The table below provides a summary listing of all such projects for the installation of equipment, where the cost of installation is \$100,000 or more, accomplished in FY 1978 and planned in FY 1979, FY 1980 and FY 1981:

Facility/Equipment	RDTE Project Number	Location	Total Obligational Authority (Thousands of Dollars)			
			FY 1978	FY 1979	FY 1980	FY 1981

SECTION I

Projects Accomplished or Underway

a. Purchase/Install ADP Processors, Technical Control Facilities, TMDE, Peripheral and Ancillary Devices	IX464779D309	Bldg 1209 Ft Monmouth, NJ	-	302	228	-
b. Provide Emulator Systems Hardware Expansion and Army GAMO Emulations for the Teleprocessing Design Center	IX464712D321 IX464779D309	Hexagon Ft Monmouth, NJ	489	1,100	1,050	-

SECTION II

Projects Planned or Projected

Negative

Section 7 (Contd)

MAJOR IMPROVEMENTS TO AND CONSTRUCTION OF GOVERNMENT-OWNED
FACILITIES FUNDED BY RDTE, ARMY APPROPRIATION

PART 3. UTILIZATION OF RDTE APPROPRIATION FOR MINOR CONSTRUCTION

For in-house installations, construction projects in support of R&D for \$100,000 or less are funded from RDTE appropriations. Such expenditures are authorized by 10 USC 2674 and the applicable provisions of the current DOD Appropriation Act. Under this procedure, project approval at this level is authorized by the Major Command concerned, or delegated to R&D installation commanders as appropriate. The table below provides a summary total of such minor construction accomplished in FY 1978, and the estimated amounts planned for FY 1979, FY 1980 and FY 1981. All minor construction must result in a complete and usable facility. In no event are two or more minor construction projects or minor and major construction projects to be contrived to form a usable facility.

SUMMARY OF MINOR CONSTRUCTION FUNDED BY RDTE, ARMY

<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u>	<u>FY 1981</u>
1,476	1,779	1,641	1,812

Section 7 (Contd)

MAJOR IMPROVEMENTS TO AND CONSTRUCTION OF GOVERNMENT-OWNED
FACILITIES FUNDED BY RDTE, ARMY APPROPRIATION

RDTE INSTALLATION PROJECT FACT SHEET
(Item b, Part 2, RD-4)

I. Facility/Equipment/Cost of Equipment: This effort is to provide Emulator System hardware expansion and Army CAMD Emulations for the TDC. Contractor is Control Data Corp.

II. R&D Program Elements: 6.47.12.A (FY 78)
6.47.79.A (FY 79/80)

III. R&D Project Numbers: IX464712D321 (FY 78)
IX464779D309 (FY 78/79)

IV. Location: Hexagon, Ft Monmouth, New Jersey

V. Summary of R&D funds programmed by fiscal year identified to the project number:

FY 77	\$ 489K
FY 78	1,100K
FY 79	1,050K

VI. Summary of other funds by fiscal year identified in the project, claimant or P-1 line item level: None

VII. Describe the relationship of the installation project to the R&D program element funding the effort: Not Applicable

VIII. Provide rationale for funding effort in R&D rather than Military Construction or O&M Appropriations: The equipment and facilities are required to emulate ADP systems compatibility and interoperability. These functions are funded by the RDTE appropriation.

**MAJOR IMPROVEMENTS TO AND CONSTRUCTION OF GOVERNMENT-OWNED
FACILITIES FUNDED BY RDTE, ARMY APPROPRIATION**

I. Facility/Equipment/Cost of Equipment: ADP Processors, Technical Control Facilities, TMDE, Peripheral and Ancillary Devices.

III. R&D Project Number: 1X464779D309

V. Summary of R&D funds programmed by fiscal year identified to the project number:	FY 79	\$302K
	FY 80	228K

VII. Describe the relationship of the installation project to the R&D program element funding the effort: Not Applicable

78

Project Data for Construction

Section 8

DEPARTMENT OF THE ARMY
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY
PROJECT DATA FOR CONSTRUCTION AT GOVERNMENT-OWNED
FACILITIES FUNDED BY RDTE, ARMY APPROPRIATION

NOT APPLICABLE